



United States
Department of
Agriculture

In cooperation with
Minnesota Agricultural
Experiment Station



Natural
Resources
Conservation
Service

Soil Survey of Roseau County, Minnesota



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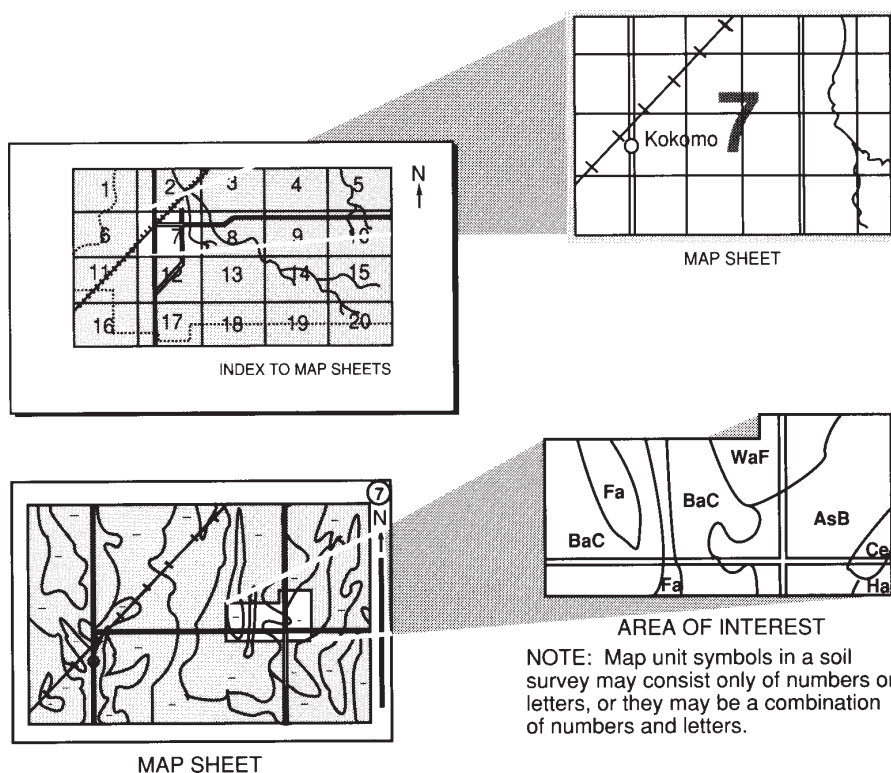
How To Use This Soil Survey

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1998. Soil names and descriptions were approved in 1999. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1998. This survey was made cooperatively by the Natural Resources Conservation Service and the Minnesota Agricultural Experiment Station. It is part of the technical assistance furnished to the Roseau County Soil and Water Conservation District.

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Cover: This historic silo is all that remains of the town of Winner. This area was homesteaded during the early 1900's but is now part of the Beltrami Island State Forest. The Winner silo is in an area of Faunce loamy fine sand, 0 to 3 percent slopes.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service homepage on the World Wide Web. The address is <http://www.nrcs.usda.gov>.

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Foreword

This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

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Soil Survey of Roseau County, Minnesota

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United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with
the Minnesota Agricultural Experiment Station

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind or segment of the landscape. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landscape, soil scientists develop a concept, or model, of how the soils were formed. Thus, during mapping, this model enables the soil scientists to predict with a considerable degree of accuracy the kind of soil or

miscellaneous area at a specific location on the landscape.

Individual soils on the landscape commonly merge into one another as their characteristics gradually change. To construct an accurate map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size, and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, soil reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the

same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

Soil scientists were denied access to a few scattered tracts in the county. These areas were mapped using knowledge of adjacent mapping and remote sensing techniques. Mapping in these areas may be less accurate than in the areas where soil scientists were allowed entry and could carefully examine the soils.

General Nature of the Survey Area

Roseau County is in northwestern Minnesota (fig. 1). The county has a total area of 1,073,900 acres. Roseau is the county seat. Major industries include manufacturing, farming, logging, and tourism.

Soils in the survey area formed on a glacial lake plain that slopes gently to the northwest. The original vegetation was generally tall grass prairie in the western two-thirds of the county and coniferous and hardwood forest in the eastern one-third. Peatland occurs throughout the survey area.

For the purposes of this survey, soil scientists have identified 84 different types of soil. The soils vary greatly in their attributes and limitations.

This soil survey updates the first soil survey of Roseau County published in 1942 (USDA, 1942). It provides additional information and has larger maps, which show the soils in greater detail.

History and Development

The staff of the Roseau County Museum assisted in the preparation of this section.

The earliest inhabitants of the county were the Sioux, who at one time occupied all of northern Minnesota. In the 1700's, they were forced west onto the prairie by the Chippewa, who invaded from the east and settled the northern Minnesota woodlands.

La Verendrye, a Frenchman who explored the region between 1732 and 1749, named the main river in the area "la Riviere aux Roseaux," which means "the River of Rushes." The name "Roseau" is derived from that first description of the river.

For more than 100 years after La Verendrye's exploration, activity in the area consisted primarily of hunting and trapping. The Hudson's Bay Company had a temporary post on the Roseau River, and the American Fur Company had one on the Warroad River.

In the early 1880's, settlers began to arrive in the area. Travel from the east was restricted because of nearly impenetrable bogs and marshland; therefore, most settlers came from the Red River Valley by way of the Sandridge Trail. This trail followed a high gravel beach (a former shoreline of Glacial Lake Agassiz) and allowed easier access to the area than was possible through the surrounding, more swampy lowlands. Consequently, the settlers first chose land along the Roseau River and then gradually moved east, settling the region around Warroad in the 1890's.

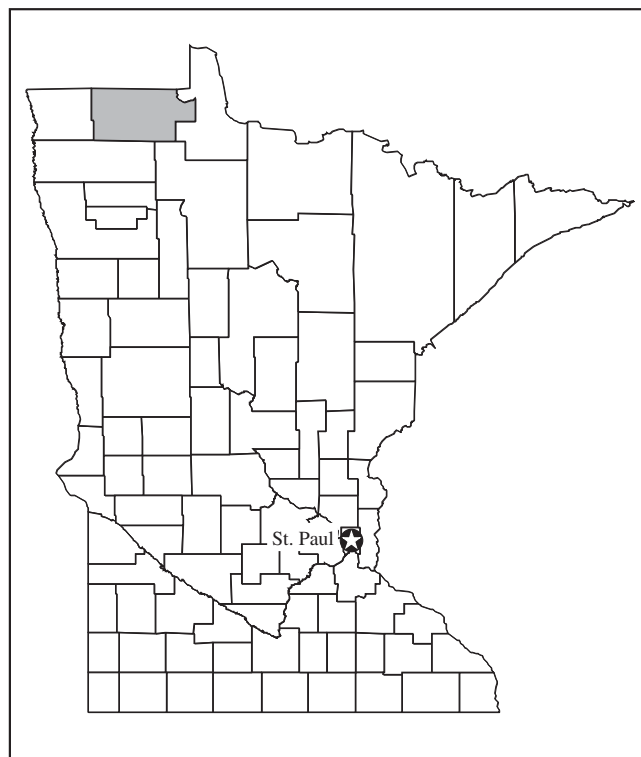


Figure 1.—Location of Roseau County in Minnesota.

Although there were many obstacles in the form of insects, poor drainage, harsh winters, a short growing season, and lack of money, the area had many resources as well. Game, fish, and wild berries were plentiful, and there was abundant timber for building purposes. Little by little the land was broken, crops were planted, fields were made bigger, and dairy herds were enlarged. Small communities began to dot the landscape as the pioneers became more established.

The village of Roseau was platted in 1892 and incorporated on December 31, 1894. The village of Warroad, whose name came from the French “road of war” and Indian “dark and bloody end of the trail,” was incorporated November 9, 1901, and platted in the fall of 1902. Roseau County was established on December 31, 1894, by proclamation of the governor. At that time Kittson County was redistricted, contributing 30 townships to Roseau County. On February 11, 1896, 15 more townships were annexed from Beltrami Territory.

By 1900, two issues were sources of concern to the agricultural community: land drainage and transportation. Although the higher land produced profitable crops, high land was not abundant, and

many farmers began agitating for drainage of lowlands to produce more farmland. At the turn of the 20th century, the State Legislature enacted laws allowing land drainage and Roseau County began a program of ditching to produce more farmable acres. Drainage has continued to be a concern for the area ever since that time.

The second concern, transportation, became an issue as soon as it became clear that the land would produce more grain than was necessary for subsistence. In order for the farmers to make a cash profit, the grain had to be shipped to outside markets. Most people thought a railroad would be built as soon as the need became evident. However, it took 9 years of negotiations with the railroad baron James J. Hill, who felt some animosity toward the eastern end of the county, before the Great Northern was built. In the meantime, the Canadian Northern built its Winnipeg route through Warroad in 1901. The Great Northern was finally built as far as Greenbush in 1904, but it was not extended through Roseau and into Warroad until 1908.

Agriculture provided the primary economic base to the county through the first half of the 20th century. In the era following World War II, however, two industries were started that have had an increasingly large impact on the economy of the county. A lumber yard in Warroad, which manufactured ammunition boxes during the war, was converted first into a sash and door factory and finally to a window manufacturing firm as its owners looked for new markets after World War II. Soon after, in the 1950's, a small company that began producing snowmobiles and later expanded to produce all-terrain vehicles and personal watercraft was started in Roseau. These two businesses expanded rapidly in the last few decades of the 20th century and helped to provide a broad economic base for the county. Agriculture continues to contribute to the economy, primarily producing small grain crops, oil seed, grass seed, beef cattle, and turkeys.

In 1995, the county had a population of approximately 15,000. The population of Roseau was 2,800, and that of Warroad was 1,800. The towns of Badger and Greenbush each had a population of less than 1,500. Nine other towns in the county had a population of less than 250.

Transportation Facilities and Markets

Two railroads provide service to Roseau County. The Canadian National Railroad passes around Lake of the Woods and serves Warroad and Roosevelt. The

Minnesota Northern Railroad provides rail service to Greenbush, Badger, Roseau, Salol, and Warroad.

Roseau County has an extensive road system. State Highway 11 crosses the county from east to west. State Highways 32, 89, 310, and 313 provide north-south access. These highways and a number of paved county roads connect additional gravel and forest roads and provide access to trading centers.

Grain is shipped via truck and rail to Duluth and by truck to local elevators. Beef and feeder cattle are trucked to market in West Fargo and South St. Paul. Milk is shipped to Thief River Falls. Timber is hauled by truck and rail to Bemidji, International Falls, and Grand Rapids.

Airports are located in both Roseau and Warroad, and the county has an area transit service.

Geology, Physiography, and Drainage

The landscape of Roseau County is a legacy of the most recent glaciation associated with the Pleistocene Epoch, also known as the Great Ice Age. During the Ice Age, which dates from approximately 2 million years ago, Minnesota was covered by at least four major glaciations. The most recent glacial interval, known as the Wisconsin Age, occurred from approximately 65,000 years before present (B.P.) to 10,000 B.P.

As each ice sheet advanced and retreated across Minnesota, it eroded or covered previously deposited materials, effectively removing most traces of earlier glaciation. Thus, the Wisconsin Age glaciers and glacial lakes are responsible for most of the current landscape in Minnesota. The last glacier to advance across the area was the Des Moines lobe of the Laurentide Ice Sheet, which was centered in the Hudson Bay region (Wright, 1973). The Des Moines lobe deposited fragmented calcareous material, eroded from the marine sediments of the Manitoba lowlands, across northwestern Minnesota. These glacial deposits, known as "till" or "drift," consist mainly of an unsorted and unstratified mixture of clay, silt, sand, and gravel. With the exception of a few granitic outcrops south of Lake of the Woods, bedrock in Roseau County is completely covered by glacial drift. In the eastern part of the county, the drift averages about 100 feet in depth; toward the west the depth increases to a little more than 200 feet. During the final retreat of the Des Moines lobe, water ponded along the southern end of the glacier, forming a vast freshwater lake known as Lake Agassiz. Initially, this lake did not have an outlet to the north because the

ice blocked the water's natural flow path to the Hudson Bay. Its first outlet was in the south, through the Lake Traverse-Big Stone Lake Gorge on the present-day border between South Dakota and Minnesota (Nikiforoff, 1947).

As the ice retreated into Canada, the lake changed dimensions several times (Nikiforoff, 1947). At its greatest extent, Lake Agassiz covered approximately 80,000 square miles (International Coalition for Land and Water Stewardship in the Red River Basin, 1989). It covered parts of Minnesota and the Dakotas early in its existence and then much of Manitoba and parts of Saskatchewan and Ontario as the ice retreated toward the Hudson Bay region. Through all its phases, Lake Agassiz existed for approximately 4,000 years, from 11,500 B.P. to 7,500 B.P. It left in its wake some of the flattest landscapes on the earth's surface (Schwartz and Thiel, 1954).

Waves and currents of Lake Agassiz reworked the glacial drift that it covered, eroding the finer particles from the higher areas and depositing them as lacustrine sediments in the lower areas. Lake sedimentation is typically determined by the turbulence of the water. Fine particles settle out in very calm areas, and coarser particles settle out in choppy water. The general scheme of zonation of sediments in a glacial lake is as follows: The lowest part of a lake basin is occupied by the lacustrine clay. Next to this is a belt of silty sediments that grades without a sharp line of demarcation into sandy deposits. Outside of the sandy zone is a region of the modified till covered by a layer of the wave-washed gravel (lag lines), and beyond this is the area of slightly modified till. Along shores with strong wave action, beach ridges are built up. These ridges are steeper and coarser on the lake side because of subsequent wave erosion of the finer materials. Along shores with shallow water and substantial amounts of aquatic vegetation, wave action is insufficient for the development of beaches.

The origin of the lacustrine deposits in Roseau County is more complex than the formation described above. The level of Lake Agassiz dropped several times, resulting in clay and silt deposits being overlain by sands and gravels as deep, calm pools became more shallow and had choppy waters.

Remnants of four major beach ridges associated with Glacial Lake Agassiz can be observed in northern Minnesota, and three of them are in Roseau County. The beach ridges are composed of sand and fine gravel, whereas the surrounding areas are composed of either till deposits or lacustrine deposits. Although

some areas can be identified as being predominantly till or predominantly lacustrine, other areas are a complex mixture of the two.

The first stable shoreline for Lake Agassiz is defined by the Herman Beach Ridge, which runs to the southwest of Roseau County. When Lake Agassiz was at the Herman Beach level, all of Roseau County was under water. As the glacier continued to melt and recede, the lake grew larger. This growth put more pressure on the southern outlet, which consequently eroded to a lower level and dropped the lake level. While it was still being drained by the southern outlet, the lake was lowered three times, thus creating the Norcross, Tintah, and Campbell beach ridges.

At the first lowering of Lake Agassiz, Beltrami Island emerged in the southeast corner of Roseau County. The most prominent beach ridge in Roseau County is on the northern side of Beltrami Island. This site is locally called Bemis Hill and is more than 60 feet high. It is a phase of Norcross Beach (Wahlberg, 1975).

Further lowering of the southern outlet brought the lake down to the level of Tintah Beach, portions of which can still be seen to the west of Highway 89 in the southern part of the county. During the time of Tintah Beach, much of the southern and southeastern parts of the county emerged as dry land and the Roseau River came into existence.

The final level of the lake, while it still drained from the southern outlet, is defined by Campbell Beach. In Roseau County this beach ridge can be seen running northeastward through Greenbush, Badger, and Fox to a point about 4 miles west of Roseau. Through most of its course across the county, this ridge is one-fourth to one-half mile wide and is 10 to 30 feet high. Like the other ridges, it is composed of sand and fine gravel. Pebbles of limestone are common in the gravel.

Eventually the ice front melted north to a point where outlets in that direction were again provided, and the southern outlet was permanently abandoned. Lake Agassiz was eventually fully drained, but remnants of it still exist. Upper and Lower Red Lakes (Beltrami County) and Lake of the Woods occupy a part of the old lake bottom.

The last part of Roseau County to become dry land was a broad strip south of the Manitoba boundary extending from Lake of the Woods to northeastern Kittson County. Much of this area is or was covered by thick beds of peat. During the withdrawal of water, a number of large and small lagoons were left scattered throughout the uncovered area. Except for the Red Lakes, very few of them were more than 10 feet deep (although several lagoons occupied areas of many

square miles each). Practically all these lakes and lagoons were gradually filled with peat. The peat deposits are typically not more than 8 feet thick and generally rest on till, although in many places a thin layer of wave-washed gravel or sand separates the peat from the underlying till.

The highest point of Roseau County is in the southeast, where a portion of Beltrami Island has an elevation of 1,270 feet (Wahlberg, 1975). The general slope and drainage of the county are toward the northwest. The Roseau River, the principal stream, begins near the southeast corner and leaves the county at its lowest point near the northwest corner, at an elevation of about 1,000 feet above sea level. The southwestern part of the county is drained by Two Rivers, and the extreme eastern end is drained by the Warroad River, which flows into Lake of the Woods.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Roseau in the period 1961 to 1990. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 4.6 degrees F and the average daily minimum temperature is -6 degrees. The lowest temperature on record, which occurred at Roseau on February 18, 1966, is -48 degrees. In summer, the average temperature is 63.9 degrees and the average daily maximum temperature is 76.7 degrees. The highest temperature, which occurred at Roseau on June 8, 1970, is 98 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 20.52 inches. Of this total, 12.35 inches, or 60 percent, usually falls in June through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 5.07 inches at Roseau on September 2, 1957. Thunderstorms occur on about 32 days each year, and most occur in July.

The average seasonal snowfall is 35.3 inches. The greatest snow depth at any one time during the period of record was 38 inches recorded on March 5, 1966.

On an average, 140 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 12 inches recorded on January 7, 1989.

The average relative humidity in midafternoon is about 62 percent. Humidity is higher at night, and the

average at dawn is about 81 percent. The sun shines 64 percent of the time possible in summer and 49 percent in winter. The prevailing wind is from the west. Average windspeed is highest, 10.1 miles per hour, in April.

Table 1.--Temperature and Precipitation
(Recorded in the period 1961-90 at Roseau, Minnesota)

	Temperature						Precipitation				
Month	Average daily maximum	Average daily minimum	Average	2 years in 10 will have--		Average number of growing degree days*	Average	2 years in 10 will have--		Average number of days with 0.10 inch or more	Average snowfall
				Maximum temperature higher than--	Minimum temperature lower than--			Less than--	More than--		
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	10.7	-10.7	0.0	38	-42	0	0.74	0.16	1.20	2	9.1
February---	18.6	-4.8	6.9	41	-37	0	.44	.18	.71	1	4.2
March-----	32.3	9.6	20.9	58	-29	5	.63	.25	1.06	2	5.3
April-----	50.7	27.2	39.0	79	-1	102	1.39	.66	2.11	3	3.3
May-----	66.1	38.8	52.5	88	18	395	2.26	1.04	3.30	5	.2
June-----	74.0	48.5	61.3	90	30	637	3.67	2.16	5.02	7	.0
July-----	78.6	53.5	66.0	92	36	799	3.27	2.12	4.31	6	.0
August-----	77.5	51.1	64.3	93	32	749	3.04	1.26	4.54	5	.0
September--	66.3	42.0	54.2	89	20	425	2.37	.99	3.53	5	.0
October----	53.9	32.2	43.0	79	11	167	1.34	.52	2.03	3	.6
November---	33.1	16.1	24.6	61	-19	12	.65	.31	1.00	2	4.4
December---	16.2	-2.6	6.8	42	-36	0	.72	.36	1.04	2	8.1
Yearly:											
Average---	48.2	25.1	36.6	---	---	---	---	---	---	---	---
Extreme---	98	-48	---	95	-48	---	---	---	---	---	---
Total-----	---	---	---	---	---	3,292	20.52	12.19	24.54	43	35.3

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

Table 2.--Freeze Dates in Spring and Fall
(Recorded in the period 1961-90 at Roseau, Minnesota)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	May 21	May 31	June 14
2 years in 10 later than--	May 15	May 27	June 9
5 years in 10 later than--	May 5	May 18	May 29
First freezing temperature in fall:			
1 year in 10 earlier than--	Sept. 17	Sept. 8	Aug. 18
2 years in 10 earlier than--	Sept. 22	Sept. 11	Aug. 25
5 years in 10 earlier than--	Oct. 3	Sept. 21	Sept. 7

Table 3.--Growing Season
(Recorded in the period 1961-90 at Roseau,
Minnesota)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	125	108	73
8 years in 10	134	114	82
5 years in 10	151	126	99
2 years in 10	167	138	116
1 year in 10	176	144	125

Formation and Classification of the Soils

This section relates the soils in the survey area to the major factors and processes of soil formation and describes the system of soil classification.

Factors of Soil Formation

Soil is a three-dimensional natural body consisting of mineral and organic material that can support plant growth. The nature of any soil at a given site is the result of the interaction of five major factors—parent material, climate, plants and animals, relief, and time (Jenny, 1941). Climate and plants and animals have an effect on parent material that is modified by relief over time. Theoretically, if all these factors were identical at different sites, the soils at these sites would be identical. Differences among the soils are caused by variations in one or more of these factors.

Parent Material

Parent material is the raw material acted on by the soil-forming processes. It largely determines soil texture, which in turn affects other properties, such as natural soil drainage and permeability. The physical and chemical composition of parent material has an important influence on the kind of soil that forms.

The soils in Roseau County are derived from the calcareous, loamy glacial till deposited during the last glaciation. This glacial till was later modified and reworked by Glacial Lake Agassiz, which covered the area after the glacier receded. Loamy glacial till underlies all of the present glacial lake sediment and is at or near the surface throughout most of the county. The differences in the depth of these glacial deposits account for many of the differences in the soils.

Soils in the eastern part of the county, around Lake of the Woods, formed primarily in material deposited by the waters of Glacial Lake Agassiz. Lacustrine silt and clay were deposited in deep lake basins, and lacustrine sand was deposited on sandbars and deltas in interbeach areas. Wabanica and Warroad soils are common in this area.

The western two-thirds of the county is dominated by Percy soils, which formed in loamy till. Rock fragments are scattered over the surface and

throughout the till. It is not uncommon for soils in this area to have thin glaciofluvial deposits overlying the till. Boash soils have a thin clayey mantle, and Strandquist soils have a layer of gravelly sand overlying the loamy glacial till.

Beach ridges and sandbars were left throughout the county after Glacial Lake Agassiz receded. The most extensive area of beach ridges and sandbars is in the southeastern part of the county in the Beltrami Island State Forest. Differences between the various sandy soils are based largely on the size of the sand particles, the content of rock fragments, and the chemical properties of the sands.

Organic soils occur throughout Roseau County and cover approximately one-third of the county (Minnesota Department of Natural Resources, 1979). These soils formed in herbaceous and woody plant remains. The degree of decomposition and the thickness of the organic material largely account for the differences among the organic soils.

Alluvium is soil material deposited by floodwater along streams. The texture of the soil material varies, depending on the speed of the floodwater, the duration of flooding, and the distance from the streambank. Soils that formed in recent alluvium can be highly stratified. The soil horizons are weakly expressed because the soil-forming processes are interrupted with each new deposition. The source of the alluvium generally is material eroded from the other soils farther upstream in the watershed.

Climate

The climate in Roseau County has significantly affected the soil-forming processes. Climatic factors, such as precipitation and temperature, have influenced the existing plant and animal communities and the physical and chemical weathering of the parent material. Physical and chemical processes are the principal factors affecting the development of soil profiles.

Roseau County has a cool, subhumid climate characterized by a wide variation in temperature between summer and winter. Except for the effects of frost action, soil-forming processes are essentially

dormant during the winter. Soil may be frozen to a depth of 3 to 5 feet for a period of 6 months.

Climate has the most pronounced effect on soil-forming processes during the growing season. The amount of rainfall influences the rate at which soluble and colloidal materials are removed from the upper part of the soil profile and deposited in the lower part. Under perennially wet and cool conditions, the decomposition of vegetation is inhibited and peat accumulates. There is slightly more precipitation in the eastern part of the county than in the western part. This difference in precipitation has affected the types of native vegetation. Soils in the western two-thirds of the county formed under prairie vegetation, and most of the soils in the eastern one-third formed under forest vegetation.

Plants and Animals

The vegetation under which a soil forms influences soil properties, such as color, structure, reaction, and content and distribution of organic matter. Vegetation extracts water from the soil, recycles nutrients, and adds organic material to the soil. Gases derived from root respiration combine with water to form acids that influence the weathering of minerals. Because of a lower content of organic matter, soils that formed under forest vegetation are generally lighter colored than those that formed under grasses.

At the time Roseau County was settled, much of the native vegetation consisted mainly of tall grass prairie. In the prairie environment, there is a large annual accumulation of organic material. Bacteria decompose the plant remains and make nitrogen available for more vigorous plant growth. Soils that formed under grassland generally are darker, have a higher water-holding capacity, and are more fertile than soils that formed under forest vegetation.

Forest vegetation in the area ranges from pine forests, which grow on the sandy soils, to mixed hardwoods, which grow on the heavier textured soils. The mineral content of the vegetation influences soil characteristics through nutrient cycling. The litter of deciduous trees is higher in bases, such as calcium and magnesium, than that of coniferous trees; therefore, soil acidity is more likely under coniferous vegetation.

Plant communities in the bogs range from reeds and sedges to dense forests. Water depth and movement during the year are major factors in determining the type of plants that develop and how well they grow on a certain site. The type of vegetation influences the degree of decomposition, which affects

fertility, aeration, and the retention and movement of water.

Bacteria, fungi, and many micro-organisms decompose organic material and release nutrients to growing plants. They influence the formation of peds. Soil properties, such as drainage, temperature, and reaction, influence the type of micro-organisms that live in the soil. Microbes participate in many organic and chemical transactions in the soil that are vital to the support of higher plants.

Earthworms, insects, and small burrowing animals mix the soil and create small channels that influence soil aeration and the percolation of water. Earthworms help to incorporate crop residue or other organic material into the soil.

Human activities have significantly influenced soil formation. Tall grass prairie and native forest have been cleared and developed for farming and other uses. Cultivation has accelerated erosion on sloping soils; wet soils have been drained; organic soils have been burned; and manure, chemical fertilizer, and pesticides have been applied in cultivated areas. Cultivation has affected soil structure and compaction and reduced the content of organic matter.

Relief

Relief influences soil formation mainly through its effect on runoff and erosion. To a lesser extent, it also influences soil temperature, the plant cover, the depth to a zone in which the soil moisture status is wet, and the accumulation and removal of organic matter.

Relief can differentiate soils that formed in the same kind of parent material because it causes differences in external soil drainage. Water that runs off the more sloping soils can collect in depressions or swales. Garnes, Chilgren, and Haug soils all formed in loamy till. The gently sloping Garnes soils are in slightly elevated, rounded areas and are moderately well drained. They are in areas where external drainage is generally good. Chilgren soils are in nearly level areas and are poorly drained. Haug soils are in swales or depressions. They are very poorly drained and have a thick organic surface layer.

Since the topography in Roseau County is level to gently sloping, most of the soils are poorly drained, have a high content of organic matter, and are mottled to varying degrees. Relief becomes more pronounced on the beach ridges, which formed through the wave action of Glacial Lake Agassiz. The sandy and gravelly soils in these areas are commonly better drained than the soils on the nearly level glacial lake plain and have a lower content of organic matter, which partially

results in a lower water-holding capacity and lower fertility levels.

Time

The length of time that the parent material has been exposed to soil-forming processes influences the nature of the soil that forms. These soil-forming processes have been active for only 9,000 to 12,000 years. Geologically, all of the soils in Roseau County are young. Because of the relatively short time of development, the soils in the area have a thinner profile than soils that have evolved over a longer period. The influence of parent material is more apparent in glaciated regions than in other areas where sufficient time has elapsed for the more complete development of the soils.

Processes of Soil Formation

Soil forms through complex processes that can be grouped into four general categories. These categories are additions, removals, transfers, and transformations.

The accumulation of organic matter in the A horizon of the mineral soils in Roseau County is an example of an addition. This accumulation is the main reason for the dark color of the A horizon. The color of the raw parent material remains uniform with increasing depth.

The leaching of lime from the upper 2 to 6 feet in many of the sandy soils in Roseau County is an example of a removal. The parent material of some soils, such as Marquette and Two Inlets soils, was limy, but the lime has been leached from the upper part of the profile by percolating water.

The translocation of clay from the A horizon to the B horizon in many soils is an example of a transfer. The A horizon or an E horizon is a zone of eluviation, or loss. The B horizon is a zone of illuviation, or gain. Baudette and Garnes soils are examples of soils in which the B horizon has more clay than the parent material and the A and E horizons have less clay. In the B horizon of some soils, thin clay films are in pores and on the faces of peds. This clay has been transferred from the A and E horizons.

An example of a transformation is the reduction and solubilization of ferrous iron. This process takes place under wet, saturated conditions in which there is no molecular oxygen. Gleying, or the reduction of iron, is evident in Cormant, Wabanica, and other soils, which have a dominantly gray subsoil. The gray color indicates the presence of reduced ferrous iron, which, in turn, implies wetness. Reduced iron is soluble, but it commonly has been moved short distances in the

soils in Roseau County, stopping either in the horizon where it originated or in an underlying horizon. Part of this iron can be reoxidized and segregated in the form of stains, concretions, or bright yellow and red concentrations.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1998 and 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 4 shows the classification of the soils in the survey area. The extent of the soils is shown in table 5.

The categories of soil classification are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Mollisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquoll (*Aqu*, meaning water, plus *oll*, from Mollisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Endoaquolls (*Endo*, meaning within, plus *aquoll*, the suborder of the Mollisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typical subgroup. Other subgroups are intergrades or extragrades. The typical is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective Typical identifies the subgroup that typifies the great group. An example is Typical Endoaquolls.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A

family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is sandy, mixed, frigid Typic Endoaquolls.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series.

Table 4.--Classification of the Soils

Soil name	Family or higher taxonomic class
Auganaush-----	Fine, smectitic, frigid Mollic Albaqualfs
Augsburg-----	Coarse-silty over clayey, mixed over smectitic, superactive, frigid Typic Calciaquolls
Baudette-----	Fine-silty, mixed, superactive, frigid Aquic Hapludalfts
Bearden-----	Fine-silty, mixed, superactive, frigid Aeric Calciaquolls
Berner-----	Loamy, mixed, euic, frigid Terric Haplosaprists
Boash-----	Clayey over loamy, smectitic over mixed, superactive, calcareous, frigid Vertic Endoaquolls
Borup-----	Coarse-silty, mixed, superactive, frigid Typic Calciaquolls
Bullwinkle-----	Loamy, mixed, euic, frigid Terric Haplosaprists
Cathro-----	Loamy, mixed, euic, frigid Terric Haplosaprists
Chilgren-----	Fine-loamy, mixed, superactive, frigid Typic Endoaqualfs
Clearriver-----	Mixed, frigid Aquic Udipsamments
Colvin-----	Fine-silty, mixed, superactive, frigid Typic Calciaquolls
Corliss-----	Mixed, frigid Typic Udipsamments
Cormant-----	Mixed, frigid Mollic Psammaquents
Croke-----	Coarse-silty over clayey, mixed over smectitic, superactive, frigid Aquic Hapludolls
Dalbo-----	Fine, smectitic, frigid Aquertic Hapludalfts
Deerwood-----	Sandy, mixed, frigid Histic Humaquepts
Dora-----	Clayey, smectitic, euic, frigid Terric Haplosaprists
Eckvoll-----	Loamy, mixed, superactive, frigid Aquic Arenic Hapludalfts
Enstrom-----	Sandy over loamy, mixed, superactive, nonacid, frigid Aquic Udorthents
Epoufette-----	Coarse-loamy, mixed, superactive, frigid Mollic Endoaqualfs
Espelie-----	Sandy over clayey, mixed over smectitic, frigid Typic Epiaquolls
Faunce-----	Mixed, frigid Argic Udipsamments
Fluvaquents-----	Fluvaquents
Foldahl-----	Sandy over loamy, mixed, superactive, frigid Oxyaquic Hapludolls
Foxhome-----	Sandy-skeletal over loamy, mixed, superactive, frigid Oxyaquic Hapludolls
Garnes-----	Fine-loamy, mixed, superactive, frigid Aquic Hapludalfts
Glyndon-----	Coarse-silty, mixed, superactive, frigid Aeric Calciaquolls
Grano-----	Fine, smectitic, frigid Typic Endoaquerts
Grimstad-----	Sandy over loamy, mixed, superactive, frigid Aeric Calciaquolls
Grygla-----	Sandy over loamy, mixed, superactive, nonacid, frigid Mollic Endoaquents
Hangaard-----	Sandy, mixed, frigid Typic Endoaquolls
Hapludalfts-----	Hapludalfts
Haug-----	Coarse-loamy, mixed, superactive, calcareous, frigid Histic Humaquepts
Hilaire-----	Sandy over clayey, mixed over smectitic, frigid Aquic Hapludolls
Hiwood-----	Mixed, frigid Aquic Udipsamments
Huot-----	Sandy over clayey, mixed over smectitic, frigid Aquic Calciudolls
Karlsruhe-----	Sandy, mixed, frigid Aeric Calciaquolls
Karlstad-----	Coarse-loamy, mixed, superactive, frigid Aquic Hapludalfts
Kratka-----	Sandy over loamy, mixed, superactive, frigid Typic Endoaquolls
Lallie-----	Fine, smectitic, calcareous, frigid Vertic Fluvaquents
Leafriver-----	Sandy, mixed, frigid Histic Humaquepts
Lupton-----	Euic, frigid Typic Haplosaprists
Mahkonce-----	Fine, smectitic, frigid Aquertic Hapludalfts
Markey-----	Sandy or sandy-skeletal, mixed, euic, frigid Terric Haplosaprists
Marquette-----	Loamy-skeletal, mixed, superactive, frigid Inceptic Hapludalfts
Mavie-----	Sandy-skeletal over loamy, mixed, superactive, frigid Typic Calciaquolls
Meehan-----	Mixed, frigid Aquic Udipsamments
Mooselake-----	Euic, frigid Typic Haplohemists
Moranville-----	Fine-silty, mixed, superactive, frigid Oxyaquic Hapludalfts
Mustinka-----	Fine, smectitic, frigid Typic Argiaquolls
Nereson-----	Coarse-loamy, mixed, superactive, frigid Aquic Argiudolls
Northwood-----	Sandy over loamy, mixed, superactive, nonacid, frigid Histic Humaquepts
Pelan-----	Loamy-skeletal, mixed, superactive, frigid Oxyaquic Argiudolls
Percy-----	Coarse-loamy, mixed, superactive, frigid Typic Calciaquolls
Redby-----	Mixed, frigid Aquic Udipsamments
Rifle-----	Euic, frigid Typic Haplohemists
Roliss-----	Fine-loamy, mixed, superactive, calcareous, frigid Typic Endoaquolls
Rosewood-----	Sandy, mixed, frigid Typic Calciaquolls
Rushlake-----	Mixed, frigid Aquic Udipsamments
Sago-----	Coarse-loamy, mixed, superactive, nonacid, frigid Histic Humaquepts
Sahkahtay-----	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, frigid Mollic Endoaqualfs
Sax-----	Fine-silty, mixed, superactive, nonacid, frigid Histic Humaquepts
Seelyeville-----	Euic, frigid Typic Haplosaprists

Table 4.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Skagen-----	Coarse-loamy, mixed, superactive, frigid Aquic Calciudolls
Skime-----	Coarse-loamy, mixed, superactive, frigid Oxyaquic Hapludalfs
Spooner-----	Fine-silty, mixed, superactive, frigid Mollic Endoaqualfs
Strandquist-----	Sandy-skeletal over loamy, mixed, superactive, calcareous, frigid Typic Endoaquolls
Strathcona-----	Sandy over loamy, mixed, superactive, frigid Typic Calciaquolls
Syrene-----	Sandy, mixed, frigid Typic Calciaquolls
Tacoosh-----	Loamy, mixed, euic, frigid Terric Haplohemists
Tawas-----	Sandy or sandy-skeletal, mixed, euic, frigid Terric Haplosaprists
Thiefriever-----	Sandy over clayey, mixed over smectitic, frigid Typic Calciaquolls
Two Inlets-----	Mixed, frigid Psammentic Hapludalfs
Udipsamments-----	Udipsamments
Ulen-----	Sandy, mixed, frigid Aeris Calciaquolls
Wabanica-----	Fine-silty, mixed, superactive, calcareous, frigid Typic Endoaquolls
Warroad-----	Sandy over loamy, mixed, superactive, frigid Typic Epiaquolls
Wheatville-----	Coarse-silty over clayey, mixed over smectitic, superactive, frigid Aeris Calciaquolls
Wildwood-----	Very fine, smectitic, nonacid, frigid Histic Humaquepts
Woodslake-----	Very fine, smectitic, frigid Vertic Epiaquolls
Wurtsmith-----	Mixed, frigid Oxyaquic Udipsamments
Zimmerman-----	Mixed, frigid Argic Udipsamments
Zippel-----	Coarse-silty, mixed, superactive, calcareous, frigid Typic Endoaquolls

Table 5.--Acreage and Proportionate Extent of the Soils

(The abbreviation "MAP" stands for "mean annual precipitation." The numbers that follow the abbreviation refer to a range in inches.)

Map symbol	Soil name	Acres	Percent
47	Colvin silty clay loam, 0 to 2 percent slopes-----	7,805	0.7
48B	Hiwood fine sand, 1 to 6 percent slopes-----	22,218	2.1
52	Augsburg loam, 0 to 2 percent slopes-----	24,013	2.2
59	Grimstad fine sandy loam, 0 to 3 percent slopes-----	2,311	0.2
64	Ulen fine sandy loam, 0 to 3 percent slopes-----	2,115	0.2
65	Foxhome sandy loam, 0 to 3 percent slopes-----	3,595	0.3
67	Bearden silt loam, 0 to 2 percent slopes-----	1,273	0.1
77	Garnes fine sandy loam, 0 to 3 percent slopes-----	8,598	0.8
111	Hangaard sandy loam, 0 to 2 percent slopes-----	1,690	0.2
116	Redby loamy fine sand, 0 to 3 percent slopes-----	24,721	2.3
117	Cormant loamy fine sand, 0 to 2 percent slopes-----	16,309	1.5
133	Dalbo loam, 0 to 3 percent slopes-----	3,551	0.3
145	Enstrom loamy fine sand, 0 to 3 percent slopes-----	12,752	1.2
147	Spooner very fine sandy loam, 0 to 2 percent slopes-----	1,699	0.2
158B	Zimmerman fine sand, 1 to 6 percent slopes-----	3,807	0.4
167B	Baudette fine sandy loam, 1 to 6 percent slopes-----	4,028	0.4
187	Haug muck, 0 to 1 percent slopes-----	15,209	1.4
191	Epoufette loamy fine sand, MAP 22-30, 0 to 2 percent slopes-----	536	*
202	Meehan loamy sand, MAP 22-30, 0 to 2 percent slopes-----	3,340	0.3
205	Karlstad loamy sand, 0 to 3 percent slopes-----	6,984	0.7
242B	Marquette loamy sand, 1 to 8 percent slopes-----	2,371	0.2
280	Pelan sandy loam, 0 to 3 percent slopes-----	1,340	0.1
379	Percy loam, 0 to 2 percent slopes, very cobbly-----	203,283	18.9
383	Percy loam, 0 to 2 percent slopes-----	18,456	1.7
384	Percy mucky loam, depressional, 0 to 1 percent slopes-----	19,302	1.8
387	Roliss loam, depressional, 0 to 1 percent slopes-----	532	*
404	Chilgren fine sandy loam, 0 to 2 percent slopes-----	3,591	0.3
412	Mavie fine sandy loam, 0 to 2 percent slopes-----	6,221	0.6
432	Strandquist loam, 0 to 2 percent slopes-----	7,435	0.7
433	Syrene mucky sandy loam, depressional, 0 to 1 percent slopes-----	1,623	0.2
435	Syrene sandy loam, 0 to 2 percent slopes-----	2,392	0.2
439	Strathcona fine sandy loam, 0 to 2 percent slopes-----	11,800	1.1
481	Kratka fine sandy loam, 0 to 2 percent slopes-----	16,363	1.5
482	Grygla loamy fine sand, 0 to 2 percent slopes-----	12,424	1.2
532	Sago muck, 0 to 1 percent slopes-----	2,449	0.2
534	Mooselake mucky peat, 0 to 1 percent slopes-----	8,330	0.8
540	Seelyeville muck, 0 to 1 percent slopes-----	24,825	2.3
541	Rifle mucky peat, MAP 18-22, 0 to 1 percent slopes-----	13,853	1.3
543	Markey muck, MAP 18-22, 0 to 1 percent slopes-----	21,091	2.0
544	Cathro muck, MAP 18-22, 0 to 1 percent slopes-----	24,489	2.3
546	Lupton muck, MAP 22-30, 0 to 1 percent slopes-----	15,643	1.5
547	Deerwood muck, 0 to 1 percent slopes-----	13,419	1.2
550	Dora muck, 0 to 1 percent slopes-----	11,389	1.1
561	Bullwinkle muck, 0 to 1 percent slopes-----	9,461	0.9
563	Northwood muck, 0 to 1 percent slopes-----	13,285	1.2
565	Eckvoll loamy fine sand, 0 to 3 percent slopes-----	6,811	0.6
568	Zippel very fine sandy loam, 0 to 2 percent slopes-----	12,033	1.1
569	Wabanica silt loam, 0 to 2 percent slopes-----	24,307	2.3
570	Faunce loamy fine sand, 0 to 3 percent slopes-----	736	*
581	Percy fine sandy loam, 0 to 1 percent slopes-----	22	*
582	Roliss loam, 0 to 2 percent slopes-----	10,220	1.0
583	Nereson fine sandy loam, 0 to 3 percent slopes-----	781	*
627	Tawas muck, MAP 22-30, 0 to 1 percent slopes-----	8,577	0.8
630	Wildwood muck, 0 to 1 percent slopes-----	10,552	1.0
643	Huot fine sandy loam, 0 to 3 percent slopes-----	1,227	0.1
644	Boash clay loam, 0 to 2 percent slopes-----	35,319	3.3
645	Espelie fine sandy loam, 0 to 2 percent slopes-----	9,168	0.9

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
651	Thief river fine sandy loam, 0 to 2 percent slopes-----	2,156	0.2
708	Rushlake loamy sand, 0 to 3 percent slopes-----	3,727	0.3
712	Rosewood fine sandy loam, 0 to 2 percent slopes-----	10,938	1.0
721B	Corliss loamy sand, 1 to 6 percent slopes-----	3,483	0.3
733	Berner muck, 0 to 1 percent slopes-----	2,101	0.2
737	Mahkonce fine sandy loam, 0 to 3 percent slopes-----	7,692	0.7
755	Woodslake clay, 0 to 1 percent slopes-----	5,004	0.5
767	Auganaush loam, 0 to 2 percent slopes-----	5,711	0.5
794	Clear river loamy fine sand, 0 to 3 percent slopes-----	4,727	0.4
1002	Fluvaquents, 0 to 2 percent slopes, frequently flooded-----	4,621	0.4
1030	Pits, gravel-Udipsammments complex, 1 to 50 percent slopes-----	1,834	0.2
1031	Seelyeville muck, ponded, 0 to 1 percent slopes-----	8,166	0.8
1067	Fluvaquents, frequently flooded-Hapludalfs complex, 0 to 60 percent slopes-----	11,743	1.1
1133B	Skime loamy fine sand, 0 to 4 percent slopes-----	6,020	0.6
1134	Borup-Glyndon complex, 0 to 2 percent slopes-----	10,970	1.0
1144	Strathcona and Kratka soils, depressional, 0 to 1 percent slopes-----	4,566	0.4
1154	Sax muck, 0 to 1 percent slopes-----	2,777	0.3
1158	Skagen loam, 0 to 3 percent slopes-----	3,566	0.3
1170	Skagen loam, 0 to 3 percent slopes, very cobbly-----	17,853	1.7
1179B	Moranville loamy fine sand, 0 to 4 percent slopes-----	6,846	0.6
1181	Rosewood-Ulen complex, 0 to 2 percent slopes-----	2,477	0.2
1182	Warroad fine sandy loam, 0 to 2 percent slopes-----	11,652	1.1
1187	Dora muck, ponded, 0 to 1 percent slopes-----	10,445	1.0
1191	Sahkahtay sandy loam, 0 to 2 percent slopes-----	1,419	0.1
1206	Cormant-Redby complex, 0 to 2 percent slopes-----	14,925	1.4
1214	Mustinka clay loam, 0 to 1 percent slopes-----	10,828	1.0
1274B	Redby-Hiwood-Leaf river complex, 0 to 6 percent slopes-----	16,066	1.5
1298	Borup silt loam, 0 to 2 percent slopes-----	13,088	1.2
1302	Foldahl fine sandy loam, 0 to 3 percent slopes-----	4,732	0.4
1304	Glyndon very fine sandy loam, 0 to 2 percent slopes-----	4,160	0.4
1305	Hilaire fine sandy loam, 0 to 3 percent slopes-----	4,705	0.4
1314	Tacoosh mucky peat, MAP 22-30, 0 to 1 percent slopes-----	4,184	0.4
1316	Wheatville loam, 0 to 2 percent slopes-----	1,169	0.1
1326	Augsburg and Wabanica soils, depressional, 0 to 1 percent slopes-----	2,705	0.3
1327B	Karlstad-Marquette complex, 0 to 8 percent slopes-----	3,645	0.3
1328	Northwood muck, wooded, 0 to 1 percent slopes-----	3,153	0.3
1333	Dora muck, wooded, 0 to 1 percent slopes-----	2,683	0.2
1356	Water, miscellaneous-----	243	*
1399B	Two Inlets loamy sand, noncalcareous substratum, 0 to 6 percent slopes---	4,392	0.4
1401	Grygla mucky loamy fine sand, depressional, 0 to 1 percent slopes-----	2,621	0.2
1402	Leaf river muck, wooded, 0 to 1 percent slopes-----	5,671	0.5
1404	Berner muck, wooded, 0 to 1 percent slopes-----	2,440	0.2
1405	Lallie mucky silt loam, MAP 18-22, 0 to 1 percent slopes-----	6,167	0.6
1414	Nereson fine sandy loam, 0 to 3 percent slopes, very cobbly-----	7,034	0.7
1428	Karlsruhe sandy loam, MAP 18-22, 0 to 3 percent slopes-----	562	*
1444	Wurt Smith loamy sand, MAP 22-30, 0 to 3 percent slopes-----	4,360	0.4
1448	Grano clay, MAP 18-22, 0 to 2 percent slopes-----	11,095	1.0
1449	Grano loam, MAP 18-22, 0 to 2 percent slopes-----	6,707	0.6
1807	Cathro muck, ponded, MAP 22-30, 0 to 1 percent slopes-----	11,737	1.1
1808	Markey muck, ponded, MAP 22-30, 0 to 1 percent slopes-----	4,474	0.4
1918	Croke very fine sandy loam, 0 to 2 percent slopes-----	3,268	0.3
1923B	Garnes loam, 1 to 4 percent slopes, very stony-----	4,132	0.4
1984	Leaf river muck, 0 to 1 percent slopes-----	7,267	0.7
W	Water-----	3,519	0.3
	Total-----	1,073,900	100.0

* Less than 0.1 percent.

Soil Series and Detailed Soil Map Units

In this section, arranged in alphabetical order, each soil series recognized in the survey area is described. Each series description is followed by detailed descriptions of the associated soil map units.

Characteristics of the soil and the material in which it formed are identified for each soil series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in “Keys to Soil Taxonomy” (Soil Survey Staff, 1998). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units on the soil maps in this survey represent the soils or miscellaneous areas in the survey area. These soils or miscellaneous areas are listed as individual components in the map unit description. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given in other sections of this survey.

A map unit delineation on the detailed soil maps represents an area on the landscape. It is identified by differences in the properties and taxonomic classification of components and by the percentage of each component in the map unit.

Components that are dissimilar, or contrasting, are identified in the map unit description. Dissimilar components are those that have properties and behavioral characteristics divergent enough from those of the major components to affect use or to require different management. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps.

Components that are similar to the major

components (noncontrasting) are not identified in the map unit description. Similar components are those that have properties and behavioral characteristics similar enough to those of the major components that they do not affect use or require different management.

The presence of multiple components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but if intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol is used for each map unit on the detailed soil maps. This symbol precedes the map unit name in the map unit descriptions. Each description includes general information about the unit. The map unit descriptions include representative values in feet and the months in which wet soil moisture status is highest and lowest in the soil profile and ponding is shallowest and deepest on the soil surface. The descriptions also include the classes and months in which flooding is least and most likely to occur. Tables 26, 27, and 28 provide a complete display of this data for every month of the year. The available water capacity given in each map unit description is calculated for all horizons in the soil profile. The organic matter content displayed in each map unit description is calculated for all horizons in the soil profile, except those that represent the surface duff layer on forested soils. Table 24 provides a complete display of available water capacity and organic matter content by horizon.

The principal hazards and limitations to be considered in planning for specific uses are described in other sections of this survey.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the

surface layer or of the underlying layers, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer or of the underlying layers. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. The name of a soil phase commonly indicates a feature that affects use or management. For example, Marquette loamy sand, 1 to 8 percent slopes, is a phase of the Marquette series.

A map unit is named for the component or components that make up a dominant percentage of the map unit. Many map units consist of one dominant component. These map units are consociations. Deerwood muck, 0 to 1 percent slopes, is an example.

Some map units are made up of two or more dominant components. These map units are complexes or undifferentiated groups.

A *complex* consists of two or more components in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The components of a complex cannot be mapped separately at a scale of about 1:24,000. Attempting to delineate the individual components of a complex would result in excessive clutter that could make the map illegible. The pattern and proportion of the components in a complex are somewhat similar in all areas. Borup-Glyndon complex, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more components that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the components in a mapped area are not uniform. An area can be made up of only one of the dominant components, or it can be made up of all of them. Augsburg and Wabanica soils, depressional, 0 to 1 percent slopes, is an undifferentiated group in this survey area.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. The Pits component in the map unit Pits, gravel-Udipsamments complex is an example.

The abbreviation "MAP" in a map unit name stands for "mean annual precipitation." The numbers that follow the abbreviation refer to a range in inches.

Table 5 gives the acreage and proportionate extent of each map unit. Other tables (see Contents) give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines

many of the terms used in describing the soils or miscellaneous areas.

Auganaush Series

Drainage class: Poorly drained

Permeability: Moderately slow or slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits and till

Slope range: 0 to 2 percent

Taxonomic classification: Fine, smectitic, frigid Mollic Albaqualfs

Taxadjunct features: The Auganaush soils in this survey area have a thicker surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils.

Typical Pedon

Auganaush loam, 0 to 2 percent slopes, 250 feet north and 200 feet east of the southwest corner of sec. 31, T. 162 N., R. 38 W.

A—0 to 5 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; weak very fine and fine granular structure; very firm; many very fine and fine roots; 2 percent gravel; neutral; clear smooth boundary.

E—5 to 7 inches; grayish brown (2.5Y 5/2) very fine sandy loam; few fine prominent dark yellowish brown (10YR 4/6) iron concentrations and common medium faint dark grayish brown (2.5Y 4/2) iron depletions; moderate thin and medium platy structure; very firm; few medium and coarse roots and common very fine and fine roots; 2 percent gravel; slightly acid; clear smooth boundary.

Btg—7 to 18 inches; dark gray (5Y 4/1) clay; common fine prominent dark yellowish brown (10YR 4/6) iron concentrations; moderate medium subangular blocky structure parting to moderate very fine and fine subangular blocky; firm; few very fine to coarse roots; many thick very dark gray (5Y 3/1) clay films on faces of peds; 2 percent gravel; neutral; clear wavy boundary.

Bkg1—18 to 23 inches; grayish brown (2.5Y 5/2) silty clay loam that has bands of olive gray (5Y 4/2) clay $\frac{1}{4}$ to $\frac{1}{2}$ inch thick; common fine distinct light olive brown (2.5Y 5/4) iron concentrations and many medium faint dark grayish brown (2.5Y 4/2) iron depletions; weak medium subangular blocky structure; firm; few very fine and fine roots; few medium and fine irregular light gray (2.5Y 7/2) soft masses of lime in ped interiors; slightly

effervescent; 2 percent gravel and 2 percent cobbles; moderately alkaline; clear wavy boundary.

Bkg2—23 to 58 inches; light brownish gray (2.5Y 6/2) silty clay loam that has bands of olive gray (5Y 4/2) clay $\frac{1}{4}$ to $\frac{3}{4}$ inch thick; common medium faint light olive brown (2.5Y 5/3) iron concentrations, common medium faint dark grayish brown (2.5Y 4/2) iron depletions, and few fine prominent very pale brown (10YR 7/3) iron concentrations; weak coarse subangular blocky structure; firm; common medium irregular white (2.5Y 8/1) soft masses of lime; strongly effervescent; 5 percent gravel and 3 percent cobbles; moderately alkaline; gradual wavy boundary.

Cg—58 to 80 inches; light brownish gray (2.5Y 6/2) loam; common medium faint grayish brown (2.5Y 5/2) iron depletions and common medium faint light yellowish brown (2.5Y 6/3) iron concentrations; massive; firm; common medium irregular white (2.5Y 8/1) soft masses of lime on faces of peds and in pores; strongly effervescent; 5 percent gravel and 5 percent cobbles; moderately alkaline.

Range in Characteristics

Depth to carbonates: 17 to 34 inches

A horizon:

Hue—10YR, 2.5Y, or N
Value—2 or 3
Chroma—0 or 1
Texture—loam
Content of rock fragments—0 to 2 percent

E horizon:

Hue—10YR or 2.5Y
Value—4 or 5
Chroma—1 or 2
Texture—fine sandy loam, very fine sandy loam, or loam
Content of rock fragments—0 to 2 percent

Btg horizon:

Hue—2.5Y or 5Y
Value—4
Chroma—1 or 2
Texture—clay
Content of rock fragments—0 to 2 percent

Bkg horizon:

Hue—2.5Y or 5Y
Value—5 or 6
Chroma—1 or 2
Texture—silty clay loam
Content of rock fragments—1 to 10 percent

Cg horizon:

Hue—2.5Y or 5Y
Value—5 or 6
Chroma—1 or 2
Texture—loam, clay loam, or silty clay loam
Content of rock fragments—1 to 10 percent

767—Auganaush loam, 0 to 2 percent slopes

Component Descriptions

Auganaush and similar soils

Extent: 90 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 10.3 inches

Content of organic matter in the upper 10 inches: 3.3 percent

Mustinka and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)
Available water capacity to a depth of 60 inches: 10.3 inches
Content of organic matter in the upper 10 inches: 7.1 percent

Wildwood and similar soils

Extent: 3 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials over glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February)
Ponding is shallowest (depth, months): 0.3 foot (July, August, September)
Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)
Available water capacity to a depth of 60 inches: 5.7 inches
Content of organic matter in the upper 10 inches: 62.0 percent

Mahkonce and similar soils

Extent: 2 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 9.7 inches
Content of organic matter in the upper 10 inches: 2.0 percent

Management

Major uses: Forest land, pasture, and cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Augsburg Series

Drainage class: Poorly drained and very poorly drained
Permeability: Upper part—moderately rapid; lower part—slow or very slow
Landform: Lake plains
Parent material: Glaciolacustrine deposits
Slope range: 0 to 2 percent
Taxonomic classification: Coarse-silty over clayey, mixed over smectitic, superactive, frigid Typic Calciaquolls

Typical Pedon

Augsburg loam, 0 to 2 percent slopes, 1,450 feet south and 300 feet west of the northeast corner of sec. 31, T. 162 N., R. 39 W.

Ap—0 to 9 inches; black (N 2/0) loam, black (N 2/0) dry; weak fine subangular blocky structure; friable; common very fine roots; slightly effervescent; slightly alkaline; abrupt smooth boundary.

Bkg—9 to 16 inches; grayish brown (2.5Y 5/2) silt loam; few fine distinct light olive brown (2.5Y 5/4) iron concentrations; weak fine subangular blocky structure; very friable; few very fine roots; strongly effervescent; moderately alkaline; clear wavy boundary.

Bg1—16 to 24 inches; light brownish gray (2.5Y 6/2) silt loam; many fine distinct light olive brown (2.5Y 5/6) iron concentrations; weak fine subangular blocky structure; very friable; few very fine roots; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bg2—24 to 33 inches; light brownish gray (2.5Y 6/2) silt loam; common fine distinct light olive brown (2.5Y 5/6) iron concentrations; weak fine subangular blocky structure; very friable; strongly effervescent; moderately alkaline; abrupt wavy boundary.

2Cg—33 to 80 inches; very dark grayish brown (2.5Y 3/2) clay that is stratified with bands of light brownish gray (2.5Y 6/2) silt loam $\frac{1}{16}$ to $\frac{1}{8}$ inch thick; common fine prominent dark yellowish brown (10YR 4/6) iron concentrations; weak thin

platy soil fragments; firm; slightly effervescent on bottom of plates; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 8 to 13 inches

Ap horizon:

Hue—10YR or N

Value—2 or 3

Chroma—0 or 1

Texture—loam or mucky very fine sandy loam

Bkg horizon:

Hue—10YR or 2.5YR

Value—4 to 6

Chroma—1 or 2

Texture—loam, very fine sandy loam, loamy very fine sand, or silt loam

Bg horizon:

Hue—2.5YR

Value—5 or 6

Chroma—2

Texture—loam, very fine sandy loam, loamy very fine sand, or silt loam

2Cg horizon:

Hue—2.5Y or 5Y

Value—3 to 6

Chroma—1 or 2

Texture—clay or clay stratified with silt loam, very fine sandy loam, or very fine sand

52—Augsburg loam, 0 to 2 percent slopes

Component Descriptionss

Augsburg and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 4.8 percent

Croke and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April, May)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.5 inches

Content of organic matter in the upper 10 inches: 5.0 percent

Grano and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.7 inches

Content of organic matter in the upper 10 inches: 3.5 percent

Sago and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.4 inches

Content of organic matter in the upper 10 inches: 72.5 percent

Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1326—Augsburg and Wabanica soils, depressional, 0 to 1 percent slopes

Component Descriptions

Augsburg, depressional, and similar soils

Extent: 0 to 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky very fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 3.0 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.1 percent

Wabanica, depressional, and similar soils

Extent: 0 to 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky silt loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 11.7 inches

Content of organic matter in the upper 10 inches: 8.7 percent

Sax and similar soils

Extent: 6 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 14.5 inches

Content of organic matter in the upper 10 inches: 47.5 percent

Espelie and similar soils

Extent: 2 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 7.7 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Zippel and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 10.9 inches

Content of organic matter in the upper 10 inches: 4.0 percent

Management

Major use: Pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Baudette Series

Drainage class: Moderately well drained

Permeability: Moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 1 to 6 percent

Taxonomic classification: Fine-silty, mixed, superactive, frigid Aquic Hapludalfs

Typical Pedon

Baudette fine sandy loam (fig. 2), 1,700 feet south and 1,100 feet west of the northeast corner of sec. 24, T. 162 N., R. 35 W.

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) fine sandy loam, light brownish gray (10YR 6/2) dry; weak fine subangular blocky structure; friable; neutral; abrupt smooth boundary.

E—8 to 10 inches; light brownish gray (10YR 6/2) very fine sandy loam; weak thin platy structure; friable; neutral; clear wavy boundary.

Bt1—10 to 13 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few distinct discontinuous dark grayish brown (10YR 4/2) clay films on faces of peds and many distinct discontinuous light gray (10YR 7/2) silt coats on faces of peds; neutral; clear wavy boundary.

Bt2—13 to 19 inches; brown (10YR 4/3) silty clay loam; moderate medium prismatic structure parting to moderate fine subangular blocky; friable; common distinct discontinuous dark grayish brown (10YR 4/2) clay films on faces of peds; neutral; clear wavy boundary.

Bt3—19 to 30 inches; light olive brown (2.5Y 5/3) silty clay loam; few fine distinct light olive brown (2.5Y 5/6) iron concentrations and few fine faint grayish brown (2.5Y 5/2) iron depletions; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common distinct discontinuous olive brown (2.5Y 4/3) clay

films on faces of peds; neutral; clear wavy boundary.

BCK1—30 to 44 inches; light olive brown (2.5Y 5/4) silt loam; common fine and medium distinct grayish brown (2.5Y 5/2) iron depletions, few fine distinct light olive brown (2.5Y 5/6) iron concentrations, and few very fine prominent black (5YR 2.5/1) iron and manganese depletions; weak medium platy soil fragments; friable; many fine and medium prominent white (10YR 8/1) threads and soft masses of lime between peds; violently effervescent; slightly alkaline; gradual wavy boundary.

BCK2—44 to 65 inches; light olive brown (2.5Y 5/4) silt loam; common medium distinct grayish brown (2.5Y 5/2) iron depletions, common fine distinct light olive brown (2.5Y 5/6) iron concentrations, and few very fine prominent black (5YR 2.5/1) iron and manganese depletions; weak medium platy soil fragments; friable; common fine and medium prominent white (10YR 8/1) threads and soft masses of lime between peds; strongly effervescent; moderately alkaline; gradual wavy boundary.

C—65 to 80 inches; light olive brown (2.5Y 5/4) silt loam; many medium distinct grayish brown (2.5Y 5/2) iron depletions, common fine distinct light olive brown (2.5Y 5/6) iron concentrations, and few very fine prominent black (5YR 2.5/1) iron and manganese depletions; massive; friable; few fine prominent white (10YR 8/1) threads and soft masses of lime between peds; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 15 to 35 inches

Ap horizon:

Hue—10YR
Value—3
Chroma—1 or 2
Texture—fine sandy loam

E horizon:

Hue—10YR
Value—5 or 6
Chroma—2 or 3
Texture—fine sandy loam or very fine sandy loam

Bt horizon:

Hue—10YR or 2.5Y
Value—3 to 5
Chroma—2 or 3
Texture—silt loam, silty clay loam, or clay loam

BCK horizon:

Hue—2.5Y
Value—5 or 6
Chroma—3 or 4
Texture—silt loam

C horizon:

Hue—2.5Y
Value—5 or 6
Chroma—2 to 4
Texture—very fine sandy loam or silt loam

167B—Baudette fine sandy loam, 1 to 6 percent slopes

Component Descriptions

Baudette and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 11.9 inches

Content of organic matter in the upper 10 inches: 2.1 percent

Spooner and similar soils

Extent: 10 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 2.1 percent

Moranville and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 4 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 7.7 inches

Content of organic matter in the upper 10 inches: 1.1 percent

Management

Major uses: Cropland, pasture, and forest land

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Bearden Series

Drainage class: Moderately well drained

Permeability: Slow to moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, frigid Aeric Calciaquolls

Typical Pedon

Bearden silt loam, 0 to 2 percent slopes, 2,350 feet

south and 900 feet west of the northeast corner of sec. 34, T. 163 N., R. 40 W.

Ap—0 to 7 inches; black (N 2/0) silt loam, very dark gray (N 3/0) dry; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; few very fine roots; slightly effervescent; slightly alkaline; clear wavy boundary.

ABk—7 to 15 inches; black (10YR 2/1) silt loam, very dark gray (10YR 3/1) dry; common fine prominent grayish brown (2.5Y 5/2) material from the Bk1 horizon; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; disseminated lime throughout; few very fine roots; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk1—15 to 21 inches; grayish brown (2.5Y 5/2) silt loam; common fine prominent very dark gray (10YR 3/1) ABk material between peds; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; few very fine roots; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk2—21 to 32 inches; grayish brown (2.5Y 5/2) silt loam; weak fine subangular blocky structure; friable; disseminated lime throughout; few very fine roots; strongly effervescent; moderately alkaline; clear wavy boundary.

C1—32 to 41 inches; grayish brown (2.5Y 5/2) silt loam; many fine prominent dark yellowish brown (10YR 4/6) iron concentrations; weak fine subangular blocky soil fragments; friable; slightly effervescent; moderately alkaline; gradual wavy boundary.

C2—41 to 57 inches; grayish brown (2.5Y 5/2) and dark grayish brown (2.5Y 4/2), stratified silt loam and silty clay loam; many medium prominent dark yellowish brown (10YR 4/6) and common fine distinct olive brown (2.5Y 4/4) iron concentrations; moderate thin platy soil fragments parting to weak fine subangular blocky; friable; slightly effervescent; moderately alkaline; gradual wavy boundary.

C3—57 to 68 inches; light brownish gray (2.5Y 6/2) and grayish brown (2.5Y 5/2), stratified silt loam and silty clay loam; common medium prominent dark yellowish brown (10YR 4/6) iron concentrations; moderate thin platy soil fragments parting to weak fine subangular blocky; friable; slightly effervescent; moderately alkaline; gradual wavy boundary.

C4—68 to 80 inches; light brownish gray (2.5Y 6/2) and grayish brown (2.5Y 5/2), stratified silty clay loam and silty clay; few medium prominent dark

yellowish brown (10YR 4/6) iron concentrations; moderate thin platy soil fragments parting to weak fine subangular blocky; friable; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 16 inches

Ap horizon:

Hue—10YR or N
Value—2
Chroma—0 or 1
Texture—silt loam

ABk horizon:

Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam

Bk horizon:

Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—silt loam or silty clay loam

C horizon:

Hue—2.5Y or 5Y
Value—4 to 6
Chroma—2
Texture—silt loam or silty clay loam

67—Bearden silt loam, 0 to 2 percent slopes

Component Descriptions

Bearden and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silt loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.0 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 11.6 inches

Content of organic matter in the upper 10 inches: 4.3 percent

Colvin and similar soils

Extent: 15 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silty clay loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, July, September, October, November)

Available water capacity to a depth of 60 inches: 11.1 inches

Content of organic matter in the upper 10 inches: 5.5 percent

Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Berner Series

Drainage class: Very poorly drained

Permeability: Upper part—moderate; middle part—rapid; lower part—moderately slow or moderate

Landform: Lake plains

Parent material: Organic materials over glaciolacustrine deposits or till

Slope range: 0 to 1 percent

Taxonomic classification: Loamy, mixed, euic Terric Haplosaprists

Typical Pedon

Berner muck, wooded, 0 to 1 percent slopes, 1,000 feet north and 2,050 feet west of the southeast corner of sec. 19, T. 162 N., R. 44 W.

Oa1—0 to 18 inches; muck, very dark grayish brown (10YR 3/2) broken face, black (10YR 2/1) rubbed; about 10 percent fiber, 5 percent rubbed; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; many very fine and fine and common medium roots; neutral; clear wavy boundary.

Oa2—18 to 23 inches; muck, black (10YR 2/1) broken face and rubbed; about 5 percent fiber, 2 percent rubbed; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; many very fine and fine roots; neutral; clear wavy boundary.

A—23 to 28 inches; very dark gray (10YR 3/1) loamy fine sand; weak fine subangular blocky structure; very friable; common very fine and fine roots; neutral; clear wavy boundary.

Cg1—28 to 41 inches; light olive gray (5Y 6/2) fine sand; common fine distinct olive (5Y 5/6) and olive yellow (5Y 6/6) iron concentrations; single grain; loose; slightly alkaline; clear wavy boundary.

2Cg2—41 to 80 inches; light olive gray (5Y 6/2) loam; common fine and medium prominent light olive brown (2.5Y 5/6) and olive yellow (2.5Y 6/6) iron concentrations; massive; friable; strongly effervescent; 8 percent gravel; slightly alkaline.

Range in Characteristics

Thickness of the organic material: 16 to 30 inches

Other features: Some pedons have a Bg horizon.

Oa horizon:

Hue—10YR or 7.5YR

Value—2 or 3

Chroma—1 or 2

Texture—muck

Content of wood fragments—0 to 15 percent

A horizon:

Hue—2.5Y, 10YR, or N

Value—2 to 4

Chroma—0 to 2

Texture—fine sandy loam or loamy fine sand

Content of rock fragments—0 to 2 percent

Cg horizon:

Hue—2.5Y or 5Y

Value—4 to 6

Chroma—2

Texture—sand, fine sand, or loamy fine sand

Content of rock fragments—0 to 5 percent

2Cg horizon:

Hue—2.5Y or 5Y

Value—4 to 6

Chroma—2

Texture—fine sandy loam, loam, or silt loam

Content of rock fragments—2 to 10 percent

733—Berner muck, 0 to 1 percent slopes

Component Descriptions

Berner and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 14.4 inches

Content of organic matter in the upper 10 inches: 87.5 percent

Grygla and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Seelyeville and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 62.0 percent

Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1404—Berner muck, wooded, 0 to 1 percent slopes

Component Descriptions

Berner, wooded, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.2 inches

Content of organic matter in the upper 10 inches: 87.5 percent

Lupton and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 80.0 percent

Northwood, wooded, and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.9 inches

Content of organic matter in the upper 10 inches: 67.5 percent

Grygla and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Boash Series

Drainage class: Poorly drained

Permeability: Upper part—slow; lower part—moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 2 percent

Taxonomic classification: Clayey over loamy, smectitic

over mixed, superactive, calcareous, frigid Vertic Endoaquolls

Typical Pedon

Boash clay loam, 0 to 2 percent slopes, 2,300 feet south and 400 feet west of the northeast corner of sec. 29, T. 162 N., R. 38 W.

Ap—0 to 9 inches; black (N 2/0) clay loam, very dark gray (N 3/0) dry; weak fine and medium subangular blocky structure; friable; many fine roots; slightly effervescent; slightly alkaline; abrupt smooth boundary.

Bg1—9 to 17 inches; very dark gray (5Y 3/1) clay; few fine faint dark olive gray (5Y 3/2) iron depletions; weak fine and medium subangular blocky structure parting to weak fine and very fine angular blocky; firm; common fine roots; very few faint very dark gray (5Y 3/1) pressure faces on ped exteriors; slightly effervescent; slightly alkaline; clear wavy boundary.

Bg2—17 to 29 inches; olive gray (5Y 4/2) clay; few fine faint olive (5Y 4/3) iron concentrations; weak fine and medium subangular blocky structure; firm; common fine roots; very few faint dark olive gray (5Y 3/2) pressure faces on ped exteriors; strongly effervescent; slightly alkaline; clear wavy boundary.

2BCkg—29 to 65 inches; grayish brown (2.5Y 5/2) silt loam; few fine prominent pink (7.5YR 7/4) and strong brown (7.5YR 5/6) iron concentrations and few fine distinct gray (N 5/0) iron depletions; massive; firm; few fine roots; few fine rounded pale yellow (2.5Y 8/2) soft masses of lime between peds; strongly effervescent; 2 percent gravel; slightly alkaline; clear wavy boundary.

2Cg1—65 to 72 inches; olive gray (5Y 5/2) silt loam stratified with bands of dark olive gray (5Y 3/2) clay $\frac{1}{16}$ to $\frac{1}{8}$ inch thick; common fine prominent brown (7.5YR 4/4) and common medium distinct light olive brown (2.5Y 5/3) iron concentrations; massive; very firm; strongly effervescent; 5 percent gravel; slightly alkaline; gradual wavy boundary.

2Cg2—72 to 80 inches; grayish brown (2.5Y 5/2) silt loam; few fine prominent dark yellowish brown (10YR 4/6) and many coarse faint light olive brown (2.5Y 5/3) iron concentrations and few fine distinct gray (N 5/0) iron and manganese depletions; massive; firm; strongly effervescent; 10 percent gravel; slightly alkaline.

Range in Characteristics

Depth to carbonates: 0 to 9 inches

Thickness of the mollic epipedon: 7 to 20 inches

Other features: Some pedons have a Bkg horizon.

Ap horizon:

Hue—10YR or N

Value—2

Chroma—0 or 1

Texture—clay loam

Content of rock fragments—0 to 5 percent

Bg horizon:

Hue—2.5Y, 5Y, or N

Value—3 or 4

Chroma—0 to 2

Texture—silty clay or clay

Content of rock fragments—0 to 5 percent

2BCkg horizon:

Hue—2.5Y or 5Y

Value—5 or 6

Chroma—1 or 2

Texture—loam or silt loam

Content of rock fragments—2 to 10 percent

2Cg horizon:

Hue—2.5Y or 5Y

Value—3 to 6

Chroma—2

Texture—loam, clay loam, silt loam, or silt loam stratified with bands of clay

Content of rock fragments—2 to 10 percent

644—Boash clay loam, 0 to 2 percent slopes

Component Descriptions

Boash and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.6 inches

Content of organic matter in the upper 10 inches: 4.3 percent

Percy and similar soils

Extent: 7 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.5 percent

Woodslake and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Clay

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding depth: 0.5 foot all year

Available water capacity to a depth of 60 inches: 7.9 inches

Content of organic matter in the upper 10 inches: 3.4 percent

Strandquist and similar soils

Extent: 3 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 3.6 percent

Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Borup Series

Drainage class: Poorly drained

Permeability: Moderately rapid or rapid

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Coarse-silty, mixed, superactive, frigid Typic Calciaquolls

Typical Pedon

Borup silt loam, 0 to 2 percent slopes, 500 feet south and 300 feet west of the northeast corner of sec. 27, T. 163 N., R. 37 W.

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak medium subangular blocky structure; very friable; strongly effervescent; slightly alkaline; abrupt smooth boundary.

Bkg—8 to 15 inches; grayish brown (2.5Y 5/2) very fine sandy loam; many fine distinct light olive brown (2.5Y 5/4) iron concentrations; weak fine subangular blocky structure; very friable; strongly

effervescent; moderately alkaline; clear smooth boundary.

Cg1—15 to 36 inches; light brownish gray (2.5Y 6/2) silt loam; common medium faint light yellowish brown (2.5Y 6/3) and common medium distinct olive yellow (2.5Y 6/6) iron concentrations; massive; very friable; few fine black (N 2/0) manganese concretions; strongly effervescent; moderately alkaline; clear wavy boundary.

Cg2—36 to 64 inches; light brownish gray (2.5Y 6/2) silt loam; many medium faint light yellowish brown (2.5Y 6/3) and common medium distinct olive yellow (2.5Y 6/6) iron concentrations; massive; friable; strongly effervescent; moderately alkaline; clear wavy boundary.

Cg3—64 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; common medium faint light yellowish brown (2.5Y 6/3) and few fine prominent dark yellowish brown (10YR 4/6) iron concentrations; massive; firm; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 13 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1

Texture—silt loam or loam

Bkg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—very fine sandy loam, loam, or silt loam

Cg horizon:

Hue—2.5Y or 5Y

Value—6

Chroma—2 or 3

Texture—very fine sand, loamy very fine sand, very fine sandy loam, loam, or silt loam

1134—Borup-Glyndon complex, 0 to 2 percent slopes

Component Descriptions

Borup and similar soils

Extent: 55 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 11.1 inches

Content of organic matter in the upper 10 inches: 5.7 percent

Glyndon and similar soils

Extent: 35 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.6 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 11.6 inches

Content of organic matter in the upper 10 inches: 4.0 percent

Augsburg, depressional, and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky very fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 3.0 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.1 percent

Skime and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 4 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 5.1 inches

Content of organic matter in the upper 10 inches: 0.9 percent

Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1298—Borup silt loam, 0 to 2 percent slopes

Component Descriptions

Borup and similar soils

Extent: 90 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silt loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 3.8 feet (August)
Ponding does not occur (months): January, February, March, July, August, December
Ponding is deepest (depth, months): 0.3 foot (April, May, June)
Available water capacity to a depth of 60 inches: 11.6 inches
Content of organic matter in the upper 10 inches: 5.2 percent

Augsburg, depressional, and similar soils

Extent: 3 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Mucky very fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 3.0 feet (February)
Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)
Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)
Available water capacity to a depth of 60 inches: 10.1 inches
Content of organic matter in the upper 10 inches: 6.1 percent

Glyndon and similar soils

Extent: 3 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Very fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 1.6 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 11.6 inches
Content of organic matter in the upper 10 inches: 4.0 percent

Sago and similar soils

Extent: 2 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials over glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February)
Ponding is shallowest (depth, months): 0.3 foot (July, August, September)
Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)
Available water capacity to a depth of 60 inches: 13.4 inches
Content of organic matter in the upper 10 inches: 72.5 percent

Skime and similar soils

Extent: 2 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 4 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)
Ponding: None
Available water capacity to a depth of 60 inches: 5.1 inches
Content of organic matter in the upper 10 inches: 0.9 percent

Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Bullwinkle Series

Drainage class: Very poorly drained

Permeability: Upper part—moderately rapid; lower part—moderate

Landform: Lake plains

Parent material: Organic materials over glaciolacustrine deposits or till

Slope range: 0 to 1 percent

Taxonomic classification: Loamy, mixed, euic, frigid
Terrie Haplosaprists

Typical Pedon

Bullwinkle muck, 0 to 1 percent slopes, 10 feet north and 1,650 feet west of the southeast corner of sec. 26, T. 164 N., R. 40 W.

Oa1—0 to 16 inches; muck, dark reddish brown (5YR 2.5/2) broken face and rubbed; about 30 percent fiber, 10 percent rubbed; weak thick platy structure; very friable; many fine roots; 30 percent wood fragments; neutral; clear wavy boundary.

Oa2—16 to 32 inches; muck, dark reddish brown (5YR 2.5/2) broken face and rubbed; about 25 percent fiber, 7 percent rubbed; weak thick platy structure; very friable; many fine roots; 30 percent wood fragments; neutral; clear wavy boundary.

Oa3—32 to 48 inches; muck, dark reddish brown (5YR 2.5/2) broken face and rubbed; about 25 percent fiber, 7 percent rubbed; weak thick platy structure; very friable; many fine roots; 35 percent wood fragments; neutral; abrupt wavy boundary.

A—48 to 52 inches; black (N 2/0) silt loam; massive; friable; common dark brown (7.5YR 3/3) organic coats on faces of peds; slightly effervescent; slightly alkaline; abrupt wavy boundary.

Cg—52 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; common medium distinct yellowish brown (10YR 5/6) iron concentrations and common coarse faint grayish brown (2.5Y 5/2) iron depletions; massive; friable; 2 percent gravel; slightly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 16 to 51 inches

Thickness of the organic material: 16 to 51 inches

Oa horizon:

Hue—5YR or 10YR

Value—2 or 3

Chroma—1 or 2

Texture—muck

Content of wood fragments—30 to 35 percent

A horizon:

Hue—10YR, 2.5Y, or N

Value—2

Chroma—0 or 1

Texture—silt loam

Content of rock fragments—0 to 2 percent

Cg horizon:

Hue—2.5Y or 5Y

Value—6

Chroma—2

Texture—fine sandy loam, loam, or silt loam

Content of rock fragments—0 to 10 percent

561—Bullwinkle muck, 0 to 1 percent slopes

Component Descriptions

Bullwinkle and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 22.7 inches

Content of organic matter in the upper 10 inches: 72.5 percent

Lupton and similar soils

Extent: 4 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)
Ponding is shallowest (depth, months): 0.2 foot (July, August, September)
Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)
Available water capacity to a depth of 60 inches: 23.9 inches
Content of organic matter in the upper 10 inches: 80.0 percent

Northwood, wooded, and similar soils

Extent: 4 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials over glaciolacustrine deposits or till
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February)
Ponding is shallowest (depth, months): 0.2 foot (July, August, September)
Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)
Available water capacity to a depth of 60 inches: 11.9 inches
Content of organic matter in the upper 10 inches: 67.5 percent

Chilgren and similar soils

Extent: 2 percent of the unit
Geomorphic description: Flats on lake plains; swales on lake plains
Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 3.8 feet (August)
Ponding does not occur (months): January, February, March, July, August, December
Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)
Available water capacity to a depth of 60 inches: 10.4 inches
Content of organic matter in the upper 10 inches: 1.4 percent

Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Cathro Series

Drainage class: Very poorly drained
Permeability: Upper part—moderately rapid to moderately slow; lower part—moderate or moderately slow
Landform: Lake plains
Parent material: Organic materials over glaciolacustrine deposits or till
Slope range: 0 to 1 percent
Taxonomic classification: Loamy, mixed, euic, frigid
 Terric Haplosaprists

Typical Pedon

Cathro muck, 1,200 feet north and 300 feet east of the southwest corner of sec. 9, T. 162 N., R. 37 W.

Oa1—0 to 8 inches; muck, very dark gray (5YR 3/1) broken face, black (5YR 2/1) rubbed; about 28 percent fiber, 14 percent rubbed; weak fine granular structure; friable; many fine roots; 5 percent wood fragments; moderately acid; clear smooth boundary.

Oa2—8 to 20 inches; muck, very dark brown (10YR

2/2) broken face and rubbed; about 25 percent fiber, 12 percent rubbed; weak medium subangular blocky structure; friable; common very fine roots; 10 percent wood fragments; moderately acid; clear smooth boundary.

Oa3—20 to 40 inches; muck, very dark brown (10YR 2/2) broken face and rubbed; about 35 percent fiber, 15 percent rubbed; moderate medium subangular blocky structure; friable; 10 percent wood fragments; moderately acid; abrupt smooth boundary.

A—40 to 42 inches; very dark grayish brown (2.5Y 3/2) loam; common fine prominent yellowish brown (10YR 5/6) iron concentrations; weak fine subangular blocky structure; friable; strongly effervescent; slightly alkaline; clear smooth boundary.

Cg—42 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; few fine prominent yellowish brown (10YR 5/6) iron concentrations; massive; friable; strongly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: 16 to more than 60 inches
Thickness of the organic material: 16 to 51 inches

Oa horizon:

Hue—10YR, 7.5YR, 5YR, or N
 Value—2 or 3
 Chroma—0 to 3
 Texture—muck

A horizon:

Hue—10YR, 2.5Y, or 5Y
 Value—2 or 3
 Chroma—1 or 2
 Texture—sandy loam, fine sandy loam, loam, or the mucky analogs of these textures
 Content of rock fragments—0 to 5 percent

Cg horizon:

Hue—2.5Y or 5Y
 Value—4 to 6
 Chroma—1 to 3
 Texture—fine sandy loam, loam, silt loam, or silty clay loam
 Content of rock fragments—0 to 10 percent

544—Cathro muck, MAP 18-22, 0 to 1 percent slopes

Component Descriptions

Cathro and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 19.8 inches

Content of organic matter in the upper 10 inches: 72.5 percent

Percy, very cobbly, and similar soils

Extent: 4 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.0 inches

Content of organic matter in the upper 10 inches: 5.4 percent

Grygla and similar soils

Extent: 3 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Seelyeville and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 62.0 percent

Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1807—Cathro muck, ponded, MAP 22-30, 0 to 1 percent slopes

Component Descriptions

Cathro, ponded, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status: At the surface all year

Ponding depth: 1.0 foot all year

Available water capacity to a depth of 60 inches: 16.4 inches

Content of organic matter in the upper 10 inches: 72.5 percent

Haug and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Seelyeville, ponded, and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials

Flooding: None

Wet soil moisture status: At the surface all year

Ponding depth: 1.0 foot all year

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 62.0 percent

Percy and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.0 inches

Content of organic matter in the upper 10 inches: 5.4 percent

Management

Major use: Wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Chilgren Series

Drainage class: Poorly drained

Permeability: Moderate

Landform: Lake plains

Parent material: Till

Slope range: 0 to 2 percent

Taxonomic classification: Fine-loamy, mixed, superactive, frigid Typic Endoaqualfs

Typical Pedon

Chilgren fine sandy loam, 0 to 2 percent slopes, 400 feet south and 1,400 feet west of the northeast corner of sec. 35, T. 162 N., R. 36 W.

A—0 to 5 inches; very dark gray (10YR 3/1) fine sandy loam, gray (10YR 6/1) dry; weak fine subangular blocky structure; very friable; common very fine and fine roots; 1 percent gravel; neutral; clear smooth boundary.

E—5 to 9 inches; grayish brown (10YR 5/2) fine sandy loam; weak medium subangular blocky structure; very friable; common very fine and fine roots and few medium roots; 2 percent gravel; neutral; clear smooth boundary.

Btg—9 to 16 inches; dark grayish brown (2.5Y 4/2) loam; few fine prominent dark yellowish brown (10YR 4/6) and common fine distinct light olive brown (2.5Y 5/3) iron concentrations; moderate medium subangular blocky structure; firm; common very fine and fine roots and few medium and coarse roots; few distinct discontinuous very dark grayish brown (2.5Y 3/2) and common faint discontinuous very dark grayish brown (2.5Y 3/2) clay films on faces of peds; 2 percent gravel; slightly acid; clear smooth boundary.

Bkg—16 to 34 inches; light brownish gray (2.5Y 6/2) loam; common medium faint light yellowish brown (2.5Y 6/3), common medium distinct light olive brown (2.5Y 5/4), and few fine prominent dark yellowish brown (10YR 4/6) iron concentrations; weak coarse subangular blocky structure; friable; few very fine and fine roots; few fine distinct pale yellow (2.5Y 8/2) soft masses of lime between peds; strongly effervescent; 3 percent gravel and 2 percent cobbles; slightly alkaline; clear wavy boundary.

Cg—34 to 80 inches; light yellowish brown (2.5Y 6/3) loam that has few lenses of sand less than 1/4 inch thick; common medium faint light brownish gray (2.5Y 6/2) iron depletions; common medium distinct light olive brown (2.5Y 5/4) and few fine prominent yellowish brown (10YR 5/6) iron concentrations; massive; friable; strongly effervescent; 5 percent gravel and 5 percent cobbles, including 1 percent weathered fragments of granite (20 to 75 mm); slightly alkaline.

Range in Characteristics

Depth to carbonates: 12 to 20 inches

A horizon:

Hue—10YR
 Value—2 or 3
 Chroma—1
 Texture—fine sandy loam
 Content of rock fragments—0 to 2 percent

E horizon:

Hue—10YR or 2.5Y
 Value—5 or 6
 Chroma—1 or 2
 Texture—fine sandy loam or loamy fine sand
 Content of rock fragments—0 to 2 percent

Btg horizon:

Hue—2.5Y
 Value—3 to 5
 Chroma—2
 Texture—loam, clay loam, or sandy clay loam
 Content of rock fragments—2 to 5 percent

Bkg horizon:

Hue—2.5Y
 Value—5 or 6
 Chroma—2 or 3
 Texture—loam or fine sandy loam
 Content of rock fragments—2 to 15 percent

Cg horizon:

Hue—2.5Y
 Value—5 or 6
 Chroma—2 or 3
 Texture—loam or fine sandy loam
 Content of rock fragments—2 to 15 percent

404—Chilgren fine sandy loam, 0 to 2 percent slopes

Component Descriptions

Chilgren and similar soils

Extent: 85 percent of the unit
Geomorphic description: Flats on lake plains; swales on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.4 inches

Content of organic matter in the upper 10 inches: 1.4 percent

Garnes and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 10.2 inches

Content of organic matter in the upper 10 inches: 1.2 percent

Grygla and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Haug and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Clearriver Series

Drainage class: Moderately well drained

Permeability: Rapid

Landform: Beach ridges

Parent material: Beach deposits

Slope range: 0 to 3 percent

Taxonomic classification: Mixed, frigid Aquic Udipsamments

Typical Pedon

Clearriver loamy fine sand, 0 to 3 percent slopes, 25 feet south and 1,150 feet west of the northeast corner of sec. 36, T. 161 N., R. 35 W.

Ap—0 to 2 inches; black (10YR 2/1) loamy fine sand, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure; very friable; many

very fine and fine roots; slightly acid; abrupt smooth boundary.

E1—2 to 7 inches; dark yellowish brown (10YR 3/4) loamy sand; few fine distinct dark yellowish brown (10YR 4/6) iron concentrations; weak fine subangular blocky structure; very friable; many very fine and fine roots; slightly acid; clear wavy boundary.

E2—7 to 21 inches; dark yellowish brown (10YR 4/4) loamy sand; common fine distinct strong brown (7.5YR 4/6) iron concentrations; weak fine subangular blocky structure; very friable; common very fine roots; slightly acid; clear smooth boundary.

E&Bt—21 to 27 inches; brown (10YR 5/3) gravelly coarse sand (E); common fine faint grayish brown (10YR 5/2) iron depletions and common fine distinct brownish yellow (10YR 6/6) iron concentrations; single grain; loose; few very fine roots; strongly effervescent; 25 percent gravel; neutral; few lamellae of brown (7.5YR 4/4) sandy loam $\frac{1}{2}$ inch to 2 inches thick (Bt); common fine distinct strong brown (7.5YR 4/6) iron concentrations; weak fine subangular blocky structure; friable; few very fine roots; very few faint discontinuous dark brown (7.5YR 3/3) clay films on faces of peds and in pores; 5 percent gravel; neutral; abrupt wavy boundary.

C1—27 to 45 inches; brown (10YR 5/3) coarse sand; common fine distinct dark yellowish brown (10YR 4/6) iron concentrations and few fine faint grayish brown (10YR 5/2) iron depletions; single grain; loose; strongly effervescent; 10 percent gravel; slightly alkaline; clear wavy boundary.

C2—45 to 56 inches; pale brown (10YR 6/3) fine sand; few medium faint light brownish gray (10YR 6/2) iron depletions; single grain; loose; slightly effervescent; slightly alkaline; clear wavy boundary.

C3—56 to 80 inches; light brownish gray (10YR 6/2) gravelly coarse sand; single grain; loose; strongly effervescent; 25 percent gravel; slightly alkaline.

Range in Characteristics

Depth to carbonates: 20 to 36 inches

A or Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loamy fine sand

Content of rock fragments—0 to 2 percent

E horizon:

Hue—10YR

Value—3 to 6
 Chroma—2 to 6
 Texture—loamy sand, sand, fine sand, or loamy fine sand
 Content of rock fragments—0 to 5 percent

E part of E&Bt horizon:

Hue—7.5YR or 10YR
 Value—4 or 5
 Chroma—2 to 4
 Texture—coarse sand, sand, loamy sand, or fine sand
 Content of rock fragments—0 to 25 percent

Bt part of E&Bt horizon:

Hue—7.5YR or 10YR
 Value—4 or 5
 Chroma—4
 Texture—loamy sand or sandy loam
 Content of rock fragments—0 to 25 percent

C horizon:

Hue—10YR or 2.5Y
 Value—5 or 6
 Chroma—2 to 4
 Texture—coarse sand, sand, or fine sand
 Content of rock fragments—5 to 30 percent

794—Clearriver loamy fine sand, 0 to 3 percent slopes

Component Descriptions

Clearriver and similar soils

Extent: 85 percent of the unit
Geomorphic description: Beach ridges
Position on the landform: Shoulders, backslopes
Slope range: 0 to 3 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Beach deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 3.0 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)
Ponding: None
Available water capacity to a depth of 60 inches: 3.5 inches
Content of organic matter in the upper 10 inches: 0.5 percent

Hiwood and similar soils

Extent: 7 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 1 to 6 percent
Texture of the surface layer: Fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)
Ponding: None
Available water capacity to a depth of 60 inches: 4.7 inches
Content of organic matter in the upper 10 inches: 0.6 percent

Meehan and similar soils

Extent: 5 percent of the unit
Geomorphic description: Flats on lake plains; rises on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 1.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)
Ponding: None
Available water capacity to a depth of 60 inches: 4.4 inches
Content of organic matter in the upper 10 inches: 1.4 percent

Faunce and similar soils

Extent: 3 percent of the unit
Geomorphic description: Beach ridges
Position on the landform: Shoulders, summits
Slope range: 0 to 3 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Beach deposits
Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 3.6 inches

Content of organic matter in the upper 10 inches: 0.5 percent

Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Colvin Series

Drainage class: Poorly drained

Permeability: Moderately slow or moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, frigid Typic Calciaquolls

Typical Pedon

Colvin silty clay loam, 0 to 2 percent slopes, 2,350 feet north and 350 feet west of the southeast corner of sec. 11, T. 162 N., R. 40 W.

Ap—0 to 11 inches; black (N 2/0) silty clay loam, very dark gray (N 3/0) dry; moderate medium subangular blocky structure; friable; few fine roots; slightly effervescent; slightly alkaline; clear smooth boundary.

Bkg1—11 to 16 inches; gray (10YR 5/1) silty clay loam; moderate medium subangular blocky structure parting to weak fine subangular blocky; friable; few fine roots; many fine distinct white (10YR 8/1) carbonate coats on faces of peds; few fine distinct light gray (10YR 7/1) soft masses of lime between peds; violently effervescent; moderately alkaline; clear wavy boundary.

Bkg2—16 to 28 inches; light brownish gray (2.5Y 6/2) silt loam; common fine distinct light olive brown (2.5Y 5/4) iron concentrations; moderate medium subangular blocky structure parting to weak fine subangular blocky; friable; many fine prominent

white (10YR 8/1) carbonate coats on faces of peds; few fine prominent light gray (10YR 7/1) soft masses of lime between peds; violently effervescent; moderately alkaline; gradual wavy boundary.

Bkg3—28 to 41 inches; olive gray (5Y 5/2) silty clay loam; common fine faint olive (5Y 5/3) iron concentrations; moderate medium subangular blocky structure parting to weak fine subangular blocky; friable; many fine prominent white (10YR 8/1) carbonate coats on faces of peds; few fine prominent light gray (10YR 7/1) soft masses of lime between peds; few fine white (10YR 8/1) shells throughout; violently effervescent; moderately alkaline; gradual wavy boundary.

Cg1—41 to 45 inches; light olive gray (5Y 6/2) very fine sandy loam; common fine prominent light olive brown (2.5Y 5/6) and few fine prominent olive yellow (2.5Y 6/6) iron concentrations; massive; friable; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cg2—45 to 71 inches; light olive gray (5Y 6/2) silt loam; common fine prominent light olive brown (2.5Y 5/6) iron concentrations; massive; friable; many fine prominent white (10YR 8/1) carbonate coats on faces of peds; strongly effervescent; slightly alkaline; gradual wavy boundary.

Cg3—71 to 80 inches; light olive gray (5Y 6/2) silt loam; common fine prominent light olive brown (2.5Y 5/6 and 5/4) iron concentrations; massive; friable; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 8 to 14 inches

Ap horizon:

Hue—10YR or N

Value—2

Chroma—0 or 1

Texture—silty clay loam

Bkg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—3 to 6

Chroma—1 or 2

Texture—silt loam or silty clay loam

Cg horizon:

Hue—2.5Y or 5Y

Value—5 or 6

Chroma—2

Texture—silt loam, silty clay loam, or very fine sandy loam

47—Colvin silty clay loam, 0 to 2 percent slopes

Component Descriptions

Colvin and similar soils

Extent: 85 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silty clay loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, July, September, October, November)

Available water capacity to a depth of 60 inches: 11.1 inches

Content of organic matter in the upper 10 inches: 5.5 percent

Bearden and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silt loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.0 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 11.6 inches

Content of organic matter in the upper 10 inches: 4.3 percent

Grano and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.9 inches

Content of organic matter in the upper 10 inches: 4.5 percent

Sax and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 14.5 inches

Content of organic matter in the upper 10 inches: 47.5 percent

Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Corliss Series

Drainage class: Excessively drained

Permeability: Rapid

Landform: Beach ridges

Parent material: Beach deposits

Slope range: 1 to 6 percent

Taxonomic classification: Mixed, frigid Typic Udipsamments

Typical Pedon

Corliss loamy sand (fig. 3), 1 to 6 percent slopes, 1,500 feet north and 1,400 feet west of the southeast corner of sec. 21, T. 162 N., R. 40 W.

Ap—0 to 8 inches; black (10YR 2/1) loamy sand; weak fine granular structure; very friable; many fine roots; few distinct patchy white (10YR 8/1) carbonate coats on underside of rock fragments; 3 percent gravel; neutral; clear smooth boundary.

Bw—8 to 18 inches; brown (10YR 4/3) very gravelly sand; single grain; loose; common fine roots; few distinct patchy white (10YR 8/1) carbonate coats on underside of rock fragments; slightly effervescent; 45 percent gravel; slightly alkaline; clear wavy boundary.

C1—18 to 28 inches; pale brown (10YR 6/3) sand; single grain; loose; few distinct patchy white (10YR 8/1) carbonate coats on underside of rock fragments; slightly effervescent; 10 percent gravel; slightly alkaline; gradual wavy boundary.

C2—28 to 33 inches; pale brown (10YR 6/3) very gravelly sand; single grain; loose; few distinct patchy white (10YR 8/1) carbonate coats on underside of rock fragments; slightly effervescent; 35 percent gravel; slightly alkaline; gradual wavy boundary.

C3—33 to 42 inches; pale brown (10YR 6/3) very gravelly sand; single grain; loose; slightly effervescent; 55 percent gravel; slightly alkaline; gradual wavy boundary.

C4—42 to 80 inches; light brownish gray (10YR 6/2) sand; single grain; loose; very slightly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: 8 to 20 inches

A or Ap horizon:

Hue—10YR

Value—2

Chroma—1 or 2

Texture—loamy sand

Content of rock fragments—0 to 5 percent

Bw horizon:

Hue—10YR

Value—4

Chroma—4

Texture—loamy sand or sand

Content of rock fragments—0 to 45 percent

C horizon:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—3

Texture—sand or coarse sand

Content of rock fragments—0 to 55 percent

721B—Corliss loamy sand, 1 to 6 percent slopes

Component Descriptions

Corliss and similar soils

Extent: 85 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits, backslopes

Slope range: 1 to 6 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 2.9 inches

Content of organic matter in the upper 10 inches: 1.7 percent

Rushlake and similar soils

Extent: 10 percent of the unit

Geomorphic description: Rises on beach plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 3.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.0 inches

Content of organic matter in the upper 10 inches: 1.9 percent

Hangaard and similar soils

Extent: 4 percent of the unit

Geomorphic description: Swales on beach plains; flats on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, October, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 2.9 inches

Content of organic matter in the upper 10 inches: 5.5 percent

Pits, gravel

Extent: 1 percent of the unit

Slope range: 1 to 50 percent

Definition: Areas from which sand and gravel have been removed

Management

Major uses: Pasture, hayland, and cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Cormant Series

Drainage class: Poorly drained and very poorly drained

Permeability: Rapid

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Mixed, frigid Mollic Psammaquents

Typical Pedon

Cormant loamy fine sand, 0 to 2 percent slopes, 550 feet north and 2,000 feet east of the southwest corner of sec. 15, T. 159 N., R. 39 W.

Ap—0 to 6 inches; very dark gray (10YR 3/1) loamy fine sand, dark gray (10YR 4/1) dry; weak fine subangular blocky structure; very friable; many very fine and fine roots; slightly acid; abrupt smooth boundary.

Cg1—6 to 11 inches; light brownish gray (2.5Y 6/2) fine sand; single grain; loose; few very fine roots; neutral; clear smooth boundary.

Cg2—11 to 30 inches; light brownish gray (2.5Y 6/2) fine sand; common fine prominent dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; neutral; clear wavy boundary.

Cg3—30 to 45 inches; light brownish gray (2.5Y 6/2) fine sand; many medium prominent dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; neutral; clear wavy boundary.

Cg4—45 to 55 inches; light brownish gray (2.5Y 6/2) fine sand; few fine distinct yellowish brown (10YR 5/6) iron concentrations; single grain; loose; neutral; gradual wavy boundary.

Cg5—55 to 70 inches; light brownish gray (2.5Y 6/2) fine sand; few fine distinct yellowish brown (10YR 5/6) and common fine distinct olive brown (2.5Y 4/3) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; clear wavy boundary.

Cg6—70 to 75 inches; light brownish gray (2.5Y 6/2) fine sand; common fine distinct olive brown (2.5Y 4/3) iron concentrations; single grain; loose; many distinct light gray (2.5Y 7/1) soft masses of lime throughout; slightly effervescent; slightly alkaline; clear wavy boundary.

Cg7—75 to 80 inches; light brownish gray (2.5Y 6/2) fine sand; few fine distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; common distinct light gray (2.5Y 7/1) soft masses of lime throughout; slightly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: More than 36 inches

Ap horizon:

Hue—10YR

Value—2

Chroma—1 or 2
Texture—loamy fine sand

Cg horizon:

Hue—2.5Y
Value—5 or 6
Chroma—2
Texture—fine sand, sand, or loamy sand

117—Cormant loamy fine sand, 0 to 2 percent slopes

Component Descriptions

Cormant and similar soils

Extent: 85 percent of the unit
Geomorphic description: Swales on lake plains; flats on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 4.9 feet (August)
Ponding does not occur (months): January, February, March, July, August, September, November, December
Ponding is deepest (depth, months): 0.3 foot (April, May)
Available water capacity to a depth of 60 inches: 4.9 inches
Content of organic matter in the upper 10 inches: 3.9 percent

Leafriver and similar soils

Extent: 7 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials over glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)
Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)
Available water capacity to a depth of 60 inches: 8.4 inches
Content of organic matter in the upper 10 inches: 70.0 percent

Epoufette and similar soils

Extent: 3 percent of the unit
Geomorphic description: Swales on beach plains; flats on beach plains
Slope range: 0 to 2 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Beach deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 0.3 foot (April)
Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)
Ponding does not occur (months): January, February, March, July, August, September, November, December
Ponding is deepest (depth, months): 0.3 foot (April, May)
Available water capacity to a depth of 60 inches: 2.8 inches
Content of organic matter in the upper 10 inches: 4.0 percent

Redby and similar soils

Extent: 3 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 1.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)
Ponding: None
Available water capacity to a depth of 60 inches: 4.8 inches
Content of organic matter in the upper 10 inches: 0.6 percent

Grygla, depressional, and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 3.0 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 7.8 inches

Content of organic matter in the upper 10 inches: 3.1 percent

Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1206—Cormant-Redby complex, 0 to 2 percent slopes**Component Descriptions****Cormant and similar soils**

Extent: 55 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 4.5 percent

Redby and similar soils

Extent: 35 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.7 percent

Hiwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.7 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Leafriver and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.4 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Croke Series

Drainage class: Moderately well drained

Permeability: Upper part—moderately rapid; lower part—slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Coarse-silty over clayey, mixed over smectitic, superactive, frigid Aquic Hapludolls

Typical Pedon

Croke very fine sandy loam, 0 to 2 percent slopes, 200 feet south and 550 feet east of the northwest corner of sec. 20, T. 161 N., R. 39 W.

Ap—0 to 12 inches; black (10YR 2/1) very fine sandy loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure parting to weak very

fine subangular blocky; very friable; few very fine roots; neutral; clear smooth boundary.

Bw—12 to 16 inches; dark grayish brown (2.5Y 4/2) loamy very fine sand; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; few very fine roots; slightly effervescent; neutral; clear wavy boundary.

C1—16 to 21 inches; light yellowish brown (2.5Y 6/3) loamy very fine sand; common medium distinct olive yellow (2.5Y 6/6) iron concentrations; weak very thin platy structure; very friable; few very fine roots; slightly effervescent; neutral; clear wavy boundary.

2C2—21 to 33 inches; olive gray (5Y 4/2) clay; common medium prominent dark yellowish brown (10YR 4/6) and common medium prominent light olive brown (2.5Y 5/4) iron concentrations; massive; firm; common medium white (5Y 8/1) soft masses of lime between peds; strongly effervescent; slightly alkaline; gradual wavy boundary.

2C3—33 to 80 inches; olive gray (5Y 4/2) clay; common medium prominent strong brown (7.5YR 4/6) and olive brown (2.5Y 4/4) iron concentrations; massive; firm; few medium white (5Y 8/1) soft masses of lime between peds; strongly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: 12 to 30 inches

Thickness of the mollic epipedon: 8 to 12 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1

Texture—very fine sandy loam

Bw horizon:

Hue—10YR or 2.5Y

Value—3 to 5

Chroma—2 to 4

Texture—loamy very fine sand or silt loam

C horizon:

Hue—2.5Y

Value—5 or 6

Chroma—2 to 4

Texture—very fine sand, loamy very fine sand, or silt loam

2C horizon:

Hue—2.5Y or 5Y

Value—4 or 5

Chroma—1 or 2

Texture—clay

1918—Croke very fine sandy loam, 0 to 2 percent slopes

Component Descriptions

Croke and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April, May)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.5 inches

Content of organic matter in the upper 10 inches: 5.0 percent

Augsburg and similar soils

Extent: 13 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 4.8 percent

Grano and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.7 inches

Content of organic matter in the upper 10 inches: 3.5 percent

Management

Major uses: Cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Dalbo Series

Drainage class: Moderately well drained

Permeability: Upper part—moderate; middle part—slow or moderately slow; lower part—moderately slow or moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 3 percent

Taxonomic classification: Fine, smectitic, frigid Aquertic Hapludalfs

Taxadjunct features: The Dalbo soils in this survey area contain less clay than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils.

Typical Pedon

Dalbo loam, 0 to 3 percent slopes, 500 feet south and 100 feet east of the northwest corner of sec. 6, T. 161 N., R. 37 W.

Ap—0 to 6 inches; very dark gray (10YR 3/1) loam, gray (10YR 5/1) dry; weak fine subangular blocky structure; friable; common very fine and fine roots; slightly alkaline; abrupt wavy boundary.

E—6 to 15 inches; dark grayish brown (10YR 4/2) fine sandy loam; many fine faint brown (10YR 4/3) iron concentrations; weak fine subangular blocky structure; very friable; few very fine and fine roots; slightly alkaline; abrupt wavy boundary.

Bt—15 to 23 inches; olive brown (2.5Y 4/3) clay; many fine faint grayish brown (2.5Y 5/2) iron depletions; weak fine prismatic structure parting to weak fine angular blocky; firm; few very fine and fine roots; many faint very dark grayish brown (2.5Y 3/2) clay films on faces of peds and in pores; slightly alkaline; clear wavy boundary.

Bk—23 to 52 inches; very dark grayish brown (2.5Y 3/2) clay stratified with varves of light brownish gray (2.5Y 6/2) silt loam $\frac{1}{16}$ to $\frac{1}{8}$ inch thick; common fine distinct olive brown (2.5Y 4/4) iron concentrations; weak thin platy structure; firm; common light gray (2.5Y 7/2) soft masses of lime in ped interiors and on faces of peds; strongly effervescent; moderately alkaline; gradual wavy boundary.

C1—52 to 70 inches; light brownish gray (2.5Y 6/2) silty clay loam stratified with varves of very dark grayish brown (2.5Y 3/2) clay $\frac{1}{16}$ to $\frac{1}{4}$ inch thick; common fine prominent dark yellowish brown (10YR 4/6) and many medium prominent light yellowish brown (10YR 6/4) iron concentrations; weak thin platy structure; firm; common pale yellow (2.5Y 8/2) silt coats on faces of peds; slightly effervescent; 1 percent gravel; moderately alkaline; diffuse wavy boundary.

C2—70 to 80 inches; light brownish gray (2.5Y 6/2) silty clay stratified with varves of very dark grayish brown (2.5Y 3/2) clay $\frac{1}{16}$ to $\frac{1}{4}$ inch thick; common fine prominent dark yellowish brown (10YR 4/6) and many medium prominent light yellowish brown (10YR 6/4) iron concentrations; weak thin platy structure; firm; common pale yellow (2.5Y 8/2) silt coats on faces of peds; slightly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 21 to 28 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loam or loamy fine sand

E horizon:

Hue—10YR

Value—4 or 5

Chroma—1 or 2

Texture—fine sand, loamy fine sand, or fine sandy loam

Bt horizon:

Hue—10YR or 2.5Y

Value—4

Chroma—3 or 4

Texture—clay, silty clay, or silty clay loam

Bk horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2

Texture—silty clay, clay, or clay stratified with silt loam

C horizon:

Hue—2.5Y or 5Y

Value—4 to 6

Chroma—2

Texture—silty clay, clay, silty clay loam, or clay stratified with silty clay loam and silt loam

Content of rock fragments—0 to 1 percent

133—Dalbo loam, 0 to 3 percent slopes

Component Descriptions

Dalbo and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.7 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Mustinka and similar soils

Extent: 10 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 10.3 inches

Content of organic matter in the upper 10 inches: 7.1 percent

Moranville and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 4 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 7.7 inches

Content of organic matter in the upper 10 inches: 1.1 percent

Management

Major uses: Cropland, hayland, and forest land

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Deerwood Series

Drainage class: Very poorly drained

Permeability: Upper part—moderately rapid; lower part—rapid

Landform: Lake plains

Parent material: Organic materials over glaciolacustrine deposits

Slope range: 0 to 1 percent

Taxonomic classification: Sandy, mixed, frigid Histic Humaquepts

Typical Pedon

Deerwood muck, 0 to 1 percent slopes, 700 feet south and 200 feet west of the northeast corner of sec. 24, T. 162 N., R. 38 W.

Oap—0 to 14 inches; muck, black (N 2/0) broken face and rubbed; about 20 percent fiber, 10 percent rubbed; weak fine subangular blocky structure; very friable; many very fine and fine roots; slightly acid; abrupt smooth boundary.

A—14 to 16 inches; black (N 2/0) fine sandy loam; weak medium subangular blocky structure; very friable; common very fine roots; neutral; clear smooth boundary.

Cg1—16 to 19 inches; dark grayish brown (2.5Y 4/2) sand; common medium faint very dark grayish brown (2.5Y 3/2) iron depletions and few fine distinct olive brown (2.5Y 4/4) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; clear wavy boundary.

Cg2—19 to 65 inches; grayish brown (2.5Y 5/2), stratified fine sand and loamy fine sand; common medium distinct light olive brown (2.5Y 5/6) iron concentrations and few fine faint dark grayish brown (2.5Y 4/2) iron depletions; single grain; loose; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cg3—65 to 80 inches; grayish brown (2.5Y 5/2), stratified fine sand and loamy fine sand; few fine prominent dark yellowish brown (10YR 4/6) iron concentrations and common medium distinct gray (5Y 5/1) iron depletions; single grain; loose; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the organic material: 8 to 16 inches

Oap or Oa horizon:

Hue—7.5YR, 10YR, or N

Value—2 or 3

Chroma—0 to 2

Texture—muck

A horizon:

Hue—10YR, 2.5YR, 5Y, or N

Value—2 or 3

Chroma—0 or 1

Texture—loamy sand, loamy fine sand, fine sandy loam, or the mucky analogs of these textures

Content of rock fragments—0 to 5 percent

Cg horizon:

Hue—2.5Y or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—loamy fine sand, fine sand, sand, or coarse sand

Content of rock fragments—0 to 35 percent

547—Deerwood muck, 0 to 1 percent slopes

Component Descriptions

Deerwood and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.1 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Markey and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 17.9 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Rosewood and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 5.5 percent

Syrene and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on beach plains; swales on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, October, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.3 inches

Content of organic matter in the upper 10 inches: 5.5 percent

Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Dora Series

Drainage class: Very poorly drained

Permeability: Upper part—moderate or moderately rapid; lower part—very slow

Landform: Lake plains

Parent material: Organic materials over glaciolacustrine deposits

Slope range: 0 to 1 percent

Taxonomic classification: Clayey, smectitic, euic, frigid
Terrestrial Haplosaprists

Typical Pedon

Dora muck, 2,400 feet south and 100 feet west of the northeast corner of sec. 19, T. 163 N., R. 38 W.

Oa1—0 to 5 inches; muck, black (5YR 2.5/1) broken face and rubbed; about 10 percent fiber, 2 percent rubbed; weak fine and very fine subangular blocky structure; very friable; many fine and very fine roots; neutral; gradual smooth boundary.

Oa2—5 to 17 inches; muck, dark reddish brown (5YR 2.5/2) broken face and rubbed; about 15 percent fiber, 5 percent rubbed; weak thin and very thin platy structure; very friable; many very fine roots; slightly acid; gradual wavy boundary.

Oa3—17 to 31 inches; muck, black (5YR 2.5/1) broken face and rubbed; about 10 percent fiber, 5 percent rubbed; weak thin and very thin platy structure; very friable; many very fine and few medium roots; slightly acid; clear wavy boundary.

A—31 to 33 inches; black (N 2/0) silty clay; moderate fine and very fine subangular blocky structure;

firm; few fine roots; common fine distinct dark brown (7.5YR 3/2) organic stains on faces of peds; slightly acid; clear wavy boundary.

Cg1—33 to 41 inches; dark olive gray (5Y 3/2) silty clay; few fine distinct dark yellowish brown (10YR 3/4) and common medium distinct olive (5Y 5/3) iron concentrations; massive; firm; common fine distinct light gray (5Y 7/1) soft masses of lime between peds; strongly effervescent; slightly alkaline; clear wavy boundary.

Cg2—41 to 63 inches; dark olive gray (5Y 3/2) clay; common medium distinct dark yellowish brown (10YR 3/4) iron concentrations; massive; firm; slightly effervescent; slightly alkaline; clear wavy boundary.

Cg3—63 to 80 inches; dark olive gray (5Y 3/2) clay stratified with bands of light gray or gray (5Y 6/1) silt loam $\frac{1}{16}$ to $\frac{1}{8}$ inch thick; few fine distinct olive (5Y 5/3) iron concentrations; massive; very firm; slightly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: 33 to 57 inches

Thickness of the organic material: 16 to 51 inches

Oa horizon:

Hue—10YR, 7.5YR, 5YR, or N

Value—2 or 3

Chroma—0 to 2

Texture—muck

Content of wood fragments—0 to 15 percent

A horizon:

Hue—10YR, 2.5Y, or N

Value—2 or 3

Chroma—0 or 1

Texture—silty clay loam, silty clay, silt loam, or the mucky analogs of these textures

Cg horizon:

Hue—2.5Y or 5Y

Value—3 to 6

Chroma—1 or 2

Texture—clay, silty clay, silty clay loam, or clay stratified with silty clay loam or silt loam

550—Dora muck, 0 to 1 percent slopes

Component Descriptions

Dora and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials over glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)
Wet soil moisture status is lowest (depth, months): 2.1 feet (February)
Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)
Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)
Available water capacity to a depth of 60 inches: 18.3 inches
Content of organic matter in the upper 10 inches: 55.5 percent

Boash and similar soils

Extent: 4 percent of the unit
Geomorphic description: Swales on lake plains; flats on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (April)
Wet soil moisture status is lowest (depth, months): 3.0 feet (August)
Ponding does not occur (months): January, February, March, December
Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)
Available water capacity to a depth of 60 inches: 9.6 inches
Content of organic matter in the upper 10 inches: 4.3 percent

Seelyeville and similar soils

Extent: 3 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials

Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)
Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)
Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)
Available water capacity to a depth of 60 inches: 23.9 inches
Content of organic matter in the upper 10 inches: 62.0 percent

Woodslake and similar soils

Extent: 3 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Clay
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)
Ponding depth: 0.5 foot all year
Available water capacity to a depth of 60 inches: 7.9 inches
Content of organic matter in the upper 10 inches: 3.4 percent

Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1187—Dora muck, ponded, 0 to 1 percent slopes

Component Descriptions

Dora, ponded, and similar soils

Extent: 90 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent

Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials over glaciolacustrine deposits
Flooding: None
Wet soil moisture status: At the surface all year
Ponding depth: 1.0 foot all year
Available water capacity to a depth of 60 inches: 12.8 inches
Content of organic matter in the upper 10 inches: 62.0 percent

Seelyeville, ponded, and similar soils

Extent: 4 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials
Flooding: None
Wet soil moisture status: At the surface all year
Ponding depth: 1.0 foot all year
Available water capacity to a depth of 60 inches: 23.9 inches
Content of organic matter in the upper 10 inches: 62.0 percent

Wildwood and similar soils

Extent: 4 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials over glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February)
Ponding is shallowest (depth, months): 0.3 foot (July, August, September)
Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)
Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 62.0 percent

Boash and similar soils

Extent: 2 percent of the unit
Geomorphic description: Swales on lake plains; flats on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (April)
Wet soil moisture status is lowest (depth, months): 3.0 feet (August)
Ponding does not occur (months): January, February, March, December
Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)
Available water capacity to a depth of 60 inches: 9.6 inches
Content of organic matter in the upper 10 inches: 4.3 percent

Management

Major use: Wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1333—Dora muck, wooded, 0 to 1 percent slopes

Component Descriptions

Dora, wooded, and similar soils

Extent: 90 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 16.8 inches

Content of organic matter in the upper 10 inches: 55.5 percent

Lupton and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 80.0 percent

Wildwood and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 62.0 percent

Auganaush and similar soils

Extent: 2 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 10.3 inches

Content of organic matter in the upper 10 inches: 3.3 percent

Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Eckvoll Series

Drainage class: Moderately well drained

Permeability: Upper part—rapid; lower part—moderate or moderately slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 3 percent

Taxonomic classification: Loamy, mixed, superactive, frigid Aquic Arenic Hapludalfs

Typical Pedon

Eckvoll loamy fine sand, 0 to 3 percent slopes, 150 feet south and 400 feet east of the northwest corner of sec. 18, T. 159 N., R. 39 W.

- A—0 to 6 inches; black (10YR 2/1) loamy fine sand, gray (10YR 5/1) dry; weak fine subangular blocky structure parting to weak fine granular; very friable; many very fine roots; neutral; abrupt smooth boundary.
- E1—6 to 16 inches; brown (10YR 5/3) fine sand; weak fine subangular blocky structure parting to single grain; very friable; few very fine roots; neutral; clear wavy boundary.
- E2—16 to 21 inches; brown (10YR 5/3) fine sand; few fine faint dark brown (10YR 3/3) iron concentrations; weak fine subangular blocky structure parting to single grain; very friable; few very fine roots; neutral; abrupt wavy boundary.
- 2Bt—21 to 26 inches; brown (10YR 4/3) sandy clay loam; common medium distinct strong brown (7.5YR 4/6) iron concentrations and few fine faint dark grayish brown (10YR 4/2) iron depletions; weak fine subangular blocky structure; friable; few very fine roots; very few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds and in pores; neutral; abrupt wavy boundary.
- 2Bk—26 to 35 inches; light yellowish brown (2.5Y 6/3) loam; common fine distinct light olive brown (2.5Y 5/6) iron concentrations and common fine faint grayish brown (2.5Y 5/2) iron depletions; weak fine subangular blocky structure; friable; few very fine roots; many fine distinct light gray (10YR 7/2) soft masses of lime throughout; violently effervescent; 2 percent gravel; slightly alkaline; clear wavy boundary.
- 2C—35 to 80 inches; light yellowish brown (2.5Y 6/3) loam; common medium distinct light olive brown (2.5Y 5/6) and few fine prominent yellowish brown (10YR 5/6) iron concentrations and common medium faint grayish brown (2.5Y 5/2) iron depletions; massive; friable; common fine distinct light gray (10YR 7/2) soft masses of lime throughout; strongly effervescent; 2 percent gravel; moderately alkaline.

Range in Characteristics

Depth to carbonates: 26 to 32 inches

A horizon:

Hue—10YR
Value—2 or 3

Chroma—1 or 2

Texture—loamy fine sand

Content of rock fragments—0 to 2 percent

E horizon:

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—fine sand or loamy sand

Content of rock fragments—0 to 2 percent

2Bt horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—2 to 4

Texture—sandy clay loam or clay loam

Content of rock fragments—2 to 5 percent

2Bk horizon:

Hue—2.5Y

Value—6

Chroma—3

Texture—loam

Content of rock fragments—2 to 10 percent

2C horizon:

Hue—2.5Y

Value—5 or 6

Chroma—2

Texture—sandy loam, fine sandy loam, or loam

Content of rock fragments—2 to 10 percent

565—Eckvoll loamy fine sand, 0 to 3 percent slopes

Component Descriptions

Eckvoll and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.5 percent

Chilgren and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.4 inches

Content of organic matter in the upper 10 inches: 1.4 percent

Grygla and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Hiwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.7 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Management

Major uses: Forest land, pasture, and cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Enstrom Series

Drainage class: Moderately well drained

Permeability: Upper part—rapid; lower part—moderate or moderately slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 3 percent

Taxonomic classification: Sandy over loamy, mixed, superactive, nonacid, frigid Aquic Udorthents

Typical Pedon

Enstrom loamy fine sand, 0 to 3 percent slopes, 1,300 feet south and 250 feet east of the northwest corner of sec. 28, T. 160 N., R. 39 W.

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) loamy fine sand, grayish brown (10YR 5/2) dry; weak fine granular structure; very friable; many very fine and fine roots; slightly alkaline; clear smooth boundary.

Bw1—6 to 14 inches; brown (10YR 5/3) fine sand; common fine distinct dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; common very fine and fine roots; neutral; gradual wavy boundary.

Bw2—14 to 29 inches; yellowish brown (10YR 5/4) fine sand; common fine distinct dark yellowish

brown (10YR 4/6) iron concentrations; single grain; loose; slightly alkaline; clear wavy boundary.
 2C—29 to 80 inches; light brownish gray (2.5Y 6/2) loam; common fine distinct olive yellow (2.5Y 6/6) and common fine prominent yellowish brown (10YR 5/6) iron concentrations and common fine faint light gray (2.5Y 7/2) iron depletions; massive; friable; common fine and medium distinct white (10YR 8/1) soft masses of lime between peds; strongly effervescent; 3 percent gravel; moderately alkaline.

Range in Characteristics

Depth to carbonates: 20 to 40 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loamy fine sand

Content of rock fragments—0 to 5 percent

Bw horizon:

Hue—2.5Y or 10YR

Value—4 to 6

Chroma—2 to 4

Texture—sand, fine sand, or loamy fine sand

Content of rock fragments—2 to 5 percent

2C horizon:

Hue—5Y, 2.5Y, or 10YR

Value—4 to 6

Chroma—2 or 3

Texture—fine sandy loam, loam, silt loam, silty clay loam, or silt loam stratified with clay

Content of rock fragments—2 to 10 percent

145—Enstrom loamy fine sand, 0 to 3 percent slopes

Component Descriptions

Enstrom and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.1 inches

Content of organic matter in the upper 10 inches: 1.5 percent

Grygla and similar soils

Extent: 10 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Redby and similar soils

Extent: 4 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Pelan and similar soils

Extent: 1 percent of the unit

Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 7.1 inches
Content of organic matter in the upper 10 inches: 1.4 percent

Management

Major uses: Pasture, hayland, and forest land

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Epoufette Series

Drainage class: Poorly drained
Permeability: Upper part—moderately rapid; lower part—very rapid
Landform: Beach plains
Parent material: Beach deposits
Slope range: 0 to 2 percent
Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Mollic Endoaqualfs

Typical Pedon

Epoufette loamy fine sand, 3,800 feet south and 3,400 feet east of the northwest corner of sec. 20, T. 158 N., R. 33 W., in Lake of the Woods County, Minnesota:

Ap—0 to 6 inches; black (10YR 2/1) loamy fine sand, very dark grayish brown (10YR 3/2) dry; weak fine subangular blocky structure; very friable; many fine and medium roots; neutral; abrupt smooth boundary.

Eg—6 to 10 inches; dark gray (10YR 4/1) fine sand; common fine faint grayish brown (10YR 5/2) iron depletions; moderate fine subangular blocky

structure; very friable; common fine roots; neutral; abrupt smooth boundary.

Btg—10 to 20 inches; dark grayish brown (10YR 4/2) sandy loam; common fine faint grayish brown (10YR 5/2) iron depletions and common fine distinct dark yellowish brown (10YR 4/6) and dark brown (7.5YR 4/4) iron concentrations; moderate fine and medium subangular blocky structure; friable; common faint discontinuous very dark grayish brown (10YR 3/2) clay films on faces of peds and in pores; 5 percent gravel; neutral; gradual wavy boundary.

2Cg1—20 to 28 inches; grayish brown (10YR 5/2) sand; many fine distinct yellowish brown (10YR 5/6) iron concentrations; single grain; loose; 5 percent gravel; slightly alkaline; clear smooth boundary.

2Cg2—28 to 37 inches; grayish brown (10YR 5/2) coarse sand; many medium distinct yellowish brown (10YR 5/6) iron concentrations; single grain; loose; 5 percent gravel; slightly alkaline; gradual wavy boundary.

2Cg3—37 to 60 inches; grayish brown (2.5Y 5/2) gravelly coarse sand; single grain; loose; 20 percent gravel; slightly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 12 to 40 inches

Ap horizon:

Hue—10YR
 Value—2 or 3
 Chroma—1 or 2
 Texture—loamy fine sand
 Content of rock fragments—0 to 10 percent

Eg horizon:

Hue—10YR
 Value—4 or 5
 Chroma—1 or 2
 Texture—fine sand
 Content of rock fragments—0 to 15 percent

Btg horizon:

Hue—10YR or 2.5Y
 Value—4 or 5
 Chroma—1 or 2
 Texture—sandy loam or coarse sandy loam
 Content of rock fragments—5 to 15 percent

2Cg horizon:

Hue—10YR or 2.5Y
 Value—5 or 6
 Chroma—1 or 2

Texture—coarse sand or sand
Content of rock fragments—5 to 35 percent

191—Epoufette loamy fine sand, MAP 22-30, 0 to 2 percent slopes

Component Descriptions

Epoufette and similar soils

Extent: 85 percent of the unit
Geomorphic description: Flats on beach plains; swales on beach plains
Slope range: 0 to 2 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Beach deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 0.3 foot (April)
Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)
Ponding does not occur (months): January, February, March, July, August, September, November, December
Ponding is deepest (depth, months): 0.3 foot (April, May)
Available water capacity to a depth of 60 inches: 2.8 inches
Content of organic matter in the upper 10 inches: 4.0 percent

Cormant and similar soils

Extent: 5 percent of the unit
Geomorphic description: Flats on lake plains; swales on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 4.9 feet (August)
Ponding does not occur (months): January, February, March, July, August, September, November, December
Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches
Content of organic matter in the upper 10 inches: 3.9 percent

Leafriver and similar soils

Extent: 5 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials over glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February)
Ponding is shallowest (depth, months): 0.3 foot (July, August, September)
Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)
Available water capacity to a depth of 60 inches: 8.4 inches
Content of organic matter in the upper 10 inches: 70.0 percent

Meehan and similar soils

Extent: 5 percent of the unit
Geomorphic description: Rises on lake plains; flats on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 1.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)
Ponding: None
Available water capacity to a depth of 60 inches: 4.4 inches
Content of organic matter in the upper 10 inches: 1.4 percent

Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Espelie Series

Drainage class: Poorly drained

Permeability: Upper part—moderately rapid; lower part—slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Sandy over clayey, mixed over smectitic, frigid Typic Epiaquolls

Typical Pedon

Espelie fine sandy loam, 0 to 2 percent slopes, 500 feet south and 200 feet west of the northeast corner of sec. 27, T. 160 N., R. 39 W.

Ap—0 to 10 inches; black (10YR 2/1) fine sandy loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; few fine roots; slightly alkaline; clear smooth boundary.

Bg1—10 to 16 inches; dark grayish brown (2.5Y 4/2) loamy fine sand; few fine prominent yellowish brown (10YR 5/6) iron concentrations; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; slightly alkaline; clear wavy boundary.

Bg2—16 to 27 inches; grayish brown (10YR 5/2) fine sand; few fine distinct olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; slightly alkaline; clear wavy boundary.

2Cg—27 to 80 inches; dark grayish brown (2.5Y 4/2) clay with bands of light brownish gray (2.5Y 6/2) silt loam $\frac{1}{16}$ to $\frac{1}{4}$ inch thick; few medium distinct light olive brown (2.5Y 5/6) iron concentrations; weak thin platy soil fragments; firm; many medium distinct white (10YR 8/1) silt coats on faces of peds; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 17 to 27 inches

Thickness of the mollic epipedon: 7 to 11 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—fine sandy loam

Content of rock fragments—0 to 5 percent

Bg horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2

Texture—loamy fine sand or fine sand

Content of rock fragments—0 to 10 percent

2Cg horizon:

Hue—2.5Y or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—clay, silty clay, or clay stratified with silt loam or very fine sandy loam

Content of rock fragments—0 to 5 percent

645—Espelie fine sandy loam, 0 to 2 percent slopes

Component Descriptions

Espelie and similar soils

Extent: 85 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 7.7 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Grano and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.7 inches

Content of organic matter in the upper 10 inches: 3.5 percent

Hilaire and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.0 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Wildwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 62.0 percent

Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Faunce Series

Drainage class: Well drained

Permeability: Rapid

Landform: Beach ridges

Parent material: Beach deposits

Slope range: 0 to 3 percent

Taxonomic classification: Mixed, frigid Argic Udipsamments

Typical Pedon

Faunce loamy fine sand, 0 to 3 percent slopes, 1,150 feet north and 1,650 feet west of the southeast corner of sec. 25, T. 161 N., R. 35 W.

Ap—0 to 2 inches; black (10YR 2/1) loamy fine sand, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure; very friable; common very fine to medium roots; slightly acid; abrupt smooth boundary.

E1—2 to 4 inches; dark brown (10YR 3/3) loamy fine sand; weak fine subangular blocky structure; very friable; common very fine to medium roots; slightly acid; clear wavy boundary.

E2—4 to 14 inches; strong brown (7.5YR 4/6) loamy sand; weak fine subangular blocky structure; very friable; few very fine roots; 5 percent gravel; slightly acid; clear wavy boundary.

E&Bt—14 to 24 inches; brown (10YR 4/3) gravelly coarse sand (E); common fine distinct dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; few very fine roots; 15 percent

gravel; neutral; few irregular and discontinuous lamellae of dark brown (7.5YR 3/4) sandy clay loam $\frac{1}{2}$ to 1 inch thick (Bt); common fine distinct strong brown (7.5YR 4/6) iron concentrations; weak fine subangular blocky structure; friable; very few distinct discontinuous dark brown (7.5YR 3/3) clay films on faces of peds and in pores; 12 percent gravel; neutral; clear wavy boundary.

C1—24 to 54 inches; brown (10YR 5/3) sand; single grain; loose; slightly effervescent; 10 percent gravel; neutral; clear wavy boundary.

C2—54 to 67 inches; brown (10YR 5/3) fine sand; single grain; loose; slightly effervescent; slightly alkaline; clear wavy boundary.

C3—67 to 80 inches; brown (10YR 5/3) sand; single grain; loose; slightly effervescent; 8 percent gravel; slightly alkaline.

Range in Characteristics

Depth to carbonates: 23 to 35 inches

A or Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loamy fine sand

Content of rock fragments—0 to 15 percent

E horizon:

Hue—10YR or 7.5YR

Value—3 to 5

Chroma—3 to 6

Texture—loamy fine sand, loamy sand, fine sand, or sand

Content of rock fragments—5 to 15 percent

E part of E&Bt horizon:

Hue—10YR or 7.5YR

Value—3 to 5

Chroma—3 to 6

Texture—loamy fine sand, loamy sand, fine sand, or sand

Bt part of E&Bt horizon:

Hue—10YR or 7.5YR

Value—3 or 4

Chroma—4 to 6

Texture—sandy loam, loamy coarse sand, or sandy clay loam

Content of rock fragments—0 to 35 percent

C horizon:

Hue—10YR

Value—5 to 7

Chroma—3 or 4

Texture—sand, coarse sand, or fine sand

Content of rock fragments—0 to 35 percent

570—Faunce loamy fine sand, 0 to 3 percent slopes

Component Descriptions

Faunce and similar soils

Extent: 85 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Well drained

Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 3.6 inches

Content of organic matter in the upper 10 inches: 0.5 percent

Clearriver and similar soils

Extent: 7 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, backslopes

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 3.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 3.5 inches

Content of organic matter in the upper 10 inches: 0.5 percent

Zimmerman and similar soils

Extent: 4 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits

Slope range: 1 to 6 percent
Texture of the surface layer: Fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Beach deposits
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.8 inches
Content of organic matter in the upper 10 inches: 0.6 percent

Meehan and similar soils

Extent: 3 percent of the unit
Geomorphic description: Flats on lake plains; rises on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 1.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)
Ponding: None
Available water capacity to a depth of 60 inches: 4.4 inches
Content of organic matter in the upper 10 inches: 1.4 percent

Pits, gravel

Extent: 1 percent of the unit
Slope range: 1 to 50 percent
Definition: Areas from which sand and gravel have been removed

Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1002—Fluvaquents, 0 to 2 percent slopes, frequently flooded

Component Descriptions

Fluvaquents, frequently flooded, and similar soils

Extent: 90 percent of the unit
Geomorphic description: Swales on flood plains; flats on flood plains
Slope range: 0 to 2 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Alluvium
Flooding does not occur (months): January, February, December
Flooding is most likely (frequency, months): Very frequent (April, May)
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)
Ponding is shallowest (depth, months): 0.5 foot (January, February, March, June, July, August, September, October, November, December)
Ponding is deepest (depth, months): 0.7 foot (April, May)
Available water capacity to a depth of 60 inches: 6.9 inches
Content of organic matter in the upper 10 inches: 6.5 percent

Seelyeville and similar soils

Extent: 6 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials
Flooding: None
Wet soil moisture status: At the surface all year
Ponding depth: 1.0 foot all year
Available water capacity to a depth of 60 inches: 23.9 inches
Content of organic matter in the upper 10 inches: 62.0 percent

Hapludalfs and similar soils

Extent: 2 percent of the unit

Geomorphic description: Escarpments
Position on the landform: Shoulders, backslopes
Slope range: 3 to 60 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits and till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 10.1 inches
Content of organic matter in the upper 10 inches: 0.9 percent

Water

Extent: 2 percent of the unit
Definition: Naturally occurring basins of surface water

Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1067—Fluvaquents, frequently flooded-Hapludalfs complex, 0 to 60 percent slopes

Component Descriptions

Fluvaquents, frequently flooded, and similar soils

Extent: 60 percent of the unit
Geomorphic description: Flats on flood plains; swales on flood plains
Slope range: 0 to 2 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Alluvium
Flooding does not occur (months): January, February, December
Flooding is most likely (frequency, months): Very frequent (April, May)

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)
Ponding is shallowest (depth, months): 0.5 foot (January, February, March, June, July, August, September, October, November, December)
Ponding is deepest (depth, months): 0.7 foot (April, May)
Available water capacity to a depth of 60 inches: 7.0 inches
Content of organic matter in the upper 10 inches: 6.5 percent

Hapludalfs and similar soils

Extent: 30 percent of the unit
Geomorphic description: Escarpments
Position on the landform: Shoulders, backslopes
Slope range: 3 to 60 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits and till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 10.1 inches
Content of organic matter in the upper 10 inches: 0.9 percent

Seelyeville and similar soils

Extent: 5 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials
Flooding: None
Wet soil moisture status: At the surface all year
Ponding depth: 1.0 foot all year
Available water capacity to a depth of 60 inches: 23.9 inches
Content of organic matter in the upper 10 inches: 62.0 percent

Water

Extent: 5 percent of the unit

Definition: Naturally occurring basins of surface water

Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Foldahl Series

Drainage class: Moderately well drained

Permeability: Upper part—rapid; lower part—moderate or moderately slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 3 percent

Taxonomic classification: Sandy over loamy, mixed, superactive, frigid Oxyaquic Hapludolls

Typical Pedon

Foldahl loamy fine sand (fig. 4), 120 feet north and 510 feet west of the southeast corner of sec. 15, T. 147 N., R. 45 W., in Polk County, Minnesota:

Ap—0 to 9 inches; black (10YR 2/1) loamy fine sand, very dark gray (10YR 3/1) dry; weak medium subangular blocky structure parting to weak fine granular; very friable; few fine roots; neutral; abrupt smooth boundary.

A—9 to 12 inches; very dark brown (10YR 2/2) loamy fine sand; weak fine subangular blocky structure; very friable; neutral; few fine roots; gradual wavy boundary.

Bw1—12 to 22 inches; dark brown (10YR 3/3) fine sand; weak fine subangular blocky structure; very friable; neutral; clear wavy boundary.

Bw2—22 to 30 inches; dark brown (10YR 4/3) fine sand; few fine distinct yellowish brown (10YR 5/6) redoximorphic concentrations and few fine faint grayish brown (10YR 5/2) redoximorphic depletions; single grain; loose; neutral; gradual wavy boundary.

2C1—30 to 44 inches; light brownish gray (2.5Y 6/2) fine sandy loam; few fine distinct olive brown (2.5Y 4/4) redoximorphic concentrations; massive; friable; 8 percent gravel; strongly effervescent; moderately alkaline; gradual wavy boundary.

2C2—44 to 58 inches; grayish brown (2.5Y 5/2) fine sandy loam; common fine distinct light olive brown

(2.5Y 5/4) redoximorphic concentrations; weak thin platy soil fragments; friable; 8 percent gravel; slightly effervescent; moderately alkaline; clear wavy boundary.

2C3—58 to 70 inches; grayish brown (2.5Y 5/2) fine sandy loam; common medium prominent brownish yellow (10YR 6/6) redoximorphic concentrations; weak thin platy soil fragments; firm; 5 percent gravel; common fine irregularly shaped white (10YR 8/1) masses of carbonate; slightly effervescent; moderately alkaline; clear wavy boundary.

2C4—70 to 80 inches; light olive brown (2.5Y 5/3) fine sandy loam; common medium prominent brownish yellow (10YR 6/6) and few fine prominent yellowish brown (10YR 5/6) redoximorphic concentrations; weak thin platy soil fragments; firm; 6 percent gravel; few fine irregularly shaped white (10YR 8/1) masses of carbonate and few fine black (10YR 2/1) manganese stains; slightly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 16 to 32 inches

Thickness of the mollic epipedon: 7 to 12 inches

Ap or A horizon:

Hue—10YR

Value—2

Chroma—1 or 2

Texture—fine sandy loam or loamy fine sand

Content of rock fragments—0 to 5 percent

Bw horizon:

Hue—10YR

Value—3 or 4

Chroma—2 to 4

Texture—sand, fine sand, or loamy fine sand

Content of rock fragments—0 to 5 percent

2C horizon:

Hue—10YR or 2.5Y

Value—5 to 7

Chroma—2 to 4

Texture—silt loam, loam, or fine sandy loam

Content of rock fragments—5 to 15 percent

1302—Foldahl fine sandy loam, 0 to 3 percent slopes

Component Descriptions

Foldahl and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 8.8 inches
Content of organic matter in the upper 10 inches: 3.5 percent

Kratka and similar soils

Extent: 10 percent of the unit
Geomorphic description: Flats on lake plains; swales on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 4.1 feet (August)
Ponding does not occur (months): January, February, March, July, August, September, December
Ponding is deepest (depth, months): 0.3 foot (April, May)
Available water capacity to a depth of 60 inches: 8.2 inches
Content of organic matter in the upper 10 inches: 2.9 percent

Foxhome and similar soils

Extent: 5 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 8.3 inches
Content of organic matter in the upper 10 inches: 5.0 percent

Management

Major uses: Cropland and hayland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Foxhome Series

Drainage class: Moderately well drained
Permeability: Upper part—moderately rapid; lower part—moderate
Landform: Lake plains
Parent material: Glaciolacustrine deposits over till
Slope range: 0 to 3 percent
Taxonomic classification: Sandy-skeletal over loamy, mixed, superactive, frigid Oxyaquic Hapludolls

Typical Pedon

Foxhome sandy loam, 600 feet north and 600 feet west of the southeast corner of sec. 30, T. 148 N., R. 44 W., in Polk County, Minnesota:

- Ap—0 to 10 inches; black (10YR 2/1) sandy loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure parting to weak fine granular; very friable; few very fine roots; 2 percent gravel; neutral; clear wavy boundary.
- Bw1—10 to 15 inches; dark brown (10YR 3/3) loamy sand; weak fine subangular blocky structure parting to weak fine granular; very friable; few fine roots; 5 percent gravel; neutral; abrupt wavy boundary.
- 2Bw2—15 to 23 inches; brown (10YR 5/3) very gravelly coarse sand; single grain; loose; 40 percent gravel; slightly alkaline; abrupt smooth boundary.
- 3C1—23 to 54 inches; light brownish gray (2.5Y 6/2) fine sandy loam; common fine prominent yellowish brown (10YR 5/6) redoximorphic concentrations; massive; friable; 2 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.

3C2—54 to 69 inches; light yellowish brown (2.5Y 6/3) fine sandy loam; common medium prominent brownish yellow (10YR 6/6) redoximorphic concentrations; weak or moderate fine or medium subangular blocky soil fragments; friable; 2 percent gravel; common fine irregularly shaped light gray (10YR 7/2) masses of carbonate; strongly effervescent; slightly alkaline; clear smooth boundary.

3C3—69 to 80 inches; light yellowish brown (2.5Y 6/3) fine sandy loam; common fine and medium prominent brownish yellow (10YR 6/6) redoximorphic concentrations; moderate medium subangular blocky soil fragments; firm; 2 percent gravel; common fine irregularly shaped light gray (10YR 7/2) masses of carbonate; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 11 to 30 inches

Thickness of the mollic epipedon: 8 to 16 inches

Ap or A horizon:

Hue—10YR

Value—2

Chroma—1 or 2

Texture—sandy loam

Content of rock fragments—0 to 15 percent

Bw horizon:

Value—3 or 4

Chroma—2 or 3

Texture—loamy sand, sandy loam, or loam

Content of rock fragments—0 to 15 percent gravel

2Bw horizon:

Hue—2.5Y or 10YR

Value—4 to 6

Chroma—2 to 4

Texture—coarse sand or loamy coarse sand

Content of rock fragments—35 to 75 percent

3C horizon:

Hue—2.5Y or 5Y

Value—5 or 6

Chroma—2 or 3

Texture—loam, fine sandy loam, or silt loam

Content of rock fragments—2 to 10 percent

65—Foxhome sandy loam, 0 to 3 percent slopes

Component Descriptions

Foxhome and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3 inches

Content of organic matter in the upper 10 inches: 5.0 percent

Strandquist and similar soils

Extent: 12 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 3.6 percent

Skagen and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months):
2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7
feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.2
inches

Content of organic matter in the upper 10 inches: 6.1
percent

Management

Major uses: Cropland; hayland and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Garnes Series

Drainage class: Moderately well drained

Permeability: Moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits and till

Slope range: 0 to 4 percent

Taxonomic classification: Fine-loamy, mixed,
superactive, frigid Aquic Hapludalfs

Typical Pedon

Garnes fine sandy loam (fig. 5), 300 feet south and 1,050 feet west of the northeast corner of sec. 25, T. 162 N., R. 35 W.

Ap—0 to 6 inches; very dark gray (10YR 3/1) fine sandy loam, light gray (10YR 6/1) dry; weak fine subangular blocky structure parting to weak fine granular; very friable; neutral; abrupt smooth boundary.

E—6 to 9 inches; brown (10YR 5/3) loamy fine sand; weak thin platy structure parting to weak very fine subangular blocky; very friable; neutral; clear smooth boundary.

Bt—9 to 14 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; 2 percent gravel; slightly alkaline; clear smooth boundary.

Bk1—14 to 34 inches; brown (10YR 5/3) fine sandy loam; few fine faint grayish brown (10YR 5/2) iron depletions; weak medium platy structure; friable; many fine distinct white (10YR 8/1) soft masses of lime on faces of peds and between peds; 3

percent gravel; violently effervescent; moderately alkaline; gradual smooth boundary.

Bk2—34 to 72 inches; brown (10YR 5/3) fine sandy loam; common fine faint grayish brown (10YR 5/2) iron depletions and few fine prominent brown (7.5YR 4/4) iron concentrations; weak medium platy structure; friable; common fine distinct white (10YR 8/1) soft masses of lime on faces of peds and between peds; 3 percent gravel; violently effervescent; moderately alkaline; gradual wavy boundary.

C—72 to 80 inches; brown (10YR 5/3) fine sandy loam; common fine faint grayish brown (10YR 5/2) iron depletions and few fine distinct yellowish brown (10YR 5/6) iron concentrations; massive; friable; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 9 to 16 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—fine sandy loam or loam

Content of rock fragments—0 to 10 percent

E horizon:

Hue—10YR

Value—4 to 6

Chroma—2 or 3

Texture—fine sandy loam, loamy fine sand, or sandy loam

Content of rock fragments—0 to 5 percent

Bt horizon:

Hue—7.5YR or 10YR

Value—3 or 4

Chroma—2 to 4

Texture—sandy clay loam or clay loam

Content of rock fragments—0 to 10 percent

Bk horizon:

Hue—10YR or 2.5YR

Value—5 or 6

Chroma—2 to 4

Texture—fine sandy loam, sandy loam, or loam

Content of rock fragments—0 to 10 percent

C horizon:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—2 to 4

Texture—loam, fine sandy loam, or sandy loam

Content of rock fragments—2 to 15 percent

77—Garnes fine sandy loam, 0 to 3 percent slopes

Component Descriptions

Garnes and similar soils

Extent: 85 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits and till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 10.2 inches
Content of organic matter in the upper 10 inches: 1.2 percent

Chilgren and similar soils

Extent: 10 percent of the unit
Geomorphic description: Flats on lake plains; swales on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 3.8 feet (August)
Ponding does not occur (months): January, February, March, July, August, December
Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)
Available water capacity to a depth of 60 inches: 10.4 inches
Content of organic matter in the upper 10 inches: 1.4 percent

Eckvoll and similar soils

Extent: 3 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.5 percent

Pelan and similar soils

Extent: 2 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 7.1 inches
Content of organic matter in the upper 10 inches: 1.4 percent

Management

Major uses: Cropland, hayland, and forest land

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1923B—Garnes loam, 1 to 4 percent slopes, very stony

Component Descriptions

Garnes, very stony, and similar soils

Extent: 85 percent of the unit
Geomorphic description: Rises on lake plains

Slope range: 1 to 4 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits and till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 10.4 inches
Content of organic matter in the upper 10 inches: 1.1 percent

Chilgren and similar soils

Extent: 10 percent of the unit
Geomorphic description: Swales on lake plains; flats on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 3.8 feet (August)
Ponding does not occur (months): January, February, March, July, August, December
Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)
Available water capacity to a depth of 60 inches: 10.4 inches
Content of organic matter in the upper 10 inches: 1.4 percent

Eckvoll and similar soils

Extent: 3 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 8.7 inches
Content of organic matter in the upper 10 inches: 1.5 percent

Pelan and similar soils

Extent: 2 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 7.1 inches
Content of organic matter in the upper 10 inches: 1.4 percent

Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Glyndon Series

Drainage class: Moderately well drained
Permeability: Upper part—moderate; lower part—moderate or moderately rapid
Landform: Lake plains
Parent material: Glaciolacustrine deposits
Slope range: 0 to 2 percent
Taxonomic classification: Coarse-silty, mixed, superactive, frigid Aeric Calciaquolls

Typical Pedon

Glyndon very fine sandy loam (fig. 6), 2,550 feet south and 500 feet west of the northeast corner of sec. 32, T. 161 N., R. 38 W.

- Ap—0 to 8 inches; very dark gray (10YR 3/1) very fine sandy loam, gray (10YR 5/1) dry; weak fine subangular blocky structure; very friable; strongly effervescent; slightly alkaline; abrupt smooth boundary.
- A—8 to 11 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine subangular blocky structure; very friable; common fine distinct white (10YR 8/1) soft masses of lime on faces of ped; strongly effervescent; slightly alkaline; abrupt smooth boundary.
- Bk1—11 to 17 inches; light yellowish brown (2.5Y 6/3) silt loam; weak medium subangular blocky structure; very friable; violently effervescent; moderately alkaline; clear wavy boundary.
- Bk2—17 to 36 inches; light yellowish brown (2.5Y 6/4) silt loam; few fine prominent light brownish gray (10YR 6/2) iron depletions; weak medium subangular blocky structure; very friable; common fine distinct white (10YR 8/1) soft masses of lime on faces of ped; violently effervescent; moderately alkaline; clear wavy boundary.
- Bk3—36 to 40 inches; light yellowish brown (2.5Y 6/4) silt loam; common fine prominent light brownish gray (10YR 6/2) iron depletions and few fine distinct light olive brown (2.5Y 5/6) iron concentrations; weak medium subangular blocky structure; very friable; common fine distinct white (10YR 8/1) soft masses of lime on faces of ped; strongly effervescent; slightly alkaline; clear wavy boundary.
- Bk4—40 to 56 inches; light yellowish brown (2.5Y 6/3) silt loam; common fine distinct light brownish gray (10YR 6/2) iron depletions and common gray (2.5Y 5/6) iron concentrations; weak medium subangular blocky structure; very friable; common fine distinct white (10YR 8/1) soft masses of lime on faces of ped; strongly effervescent; slightly alkaline; clear wavy boundary.
- C—56 to 80 inches; light yellowish brown (2.5Y 6/3) very fine sandy loam; common fine faint light yellowish brown (10YR 6/4) and common fine prominent yellowish brown (10YR 5/6) iron concentrations and common fine faint light brownish gray (2.5Y 6/2) iron depletions; weak thin and medium platy soil fragments; friable; very few fine prominent black (N 2/0) manganese nodules; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 11 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—very fine sandy loam or silt loam

Bk horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 4

Texture—loamy very fine sand, very fine sandy loam, or silt loam

C horizon:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—2 to 4

Texture—very fine sand, very fine sandy loam, or silt loam

1304—Glyndon very fine sandy loam, 0 to 2 percent slopes

Component Descriptions

Glyndon and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 11.6 inches

Content of organic matter in the upper 10 inches: 5.0 percent

Borup and similar soils

Extent: 10 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silt loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 11.6 inches

Content of organic matter in the upper 10 inches: 5.2 percent

Skime and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 4 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 5.1 inches

Content of organic matter in the upper 10 inches: 0.9 percent

Management

Major uses: Cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Grano Series

Drainage class: Poorly drained

Permeability: Slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Fine, smectitic, frigid Typic Endoaquerts

Typical Pedon

Grano clay, 700 feet north and 1,500 feet east of the southwest corner of sec. 23, T. 162 N., R. 38 W.

Ap—0 to 7 inches; black (N 2/0) clay, very dark gray (N 3/0) dry; weak fine and medium subangular blocky structure; friable; slightly effervescent; slightly alkaline; abrupt smooth boundary.

A—7 to 13 inches; black (N 2/0) clay, very dark gray (N 3/0) dry; weak medium subangular blocky structure; friable; slightly effervescent; slightly alkaline; clear smooth boundary.

Bg—13 to 23 inches; dark olive gray (5Y 3/2) clay; weak coarse subangular blocky structure; firm; few distinct discontinuous very dark gray (5Y 3/1) pressure faces on ped exteriors; strongly effervescent; moderately alkaline; clear smooth boundary.

Cg1—23 to 36 inches; olive gray (5Y 4/2) clay; common fine faint dark gray (5Y 4/1) iron depletions and few fine prominent olive brown (2.5Y 4/4) iron concentrations; massive; firm; strongly effervescent; moderately alkaline; clear wavy boundary.

Cg2—36 to 54 inches; olive gray (5Y 4/2) silty clay; common medium prominent olive brown (2.5Y 4/4) and few fine prominent dark yellowish brown (10YR 4/6) iron concentrations and common fine faint grayish brown (2.5Y 5/2) iron depletions; massive; firm; few fine distinct white (5Y 8/1) soft masses of lime between peds; strongly effervescent; moderately alkaline; clear wavy boundary.

Cg3—54 to 80 inches; stratified olive gray (5Y 4/2) clay and light olive gray (5Y 6/2) silt loam; few fine prominent dark yellowish brown (10YR 4/6) iron concentrations and common medium faint gray (5Y 5/1) and common fine faint very dark gray (5Y 3/1) iron depletions; weak thin and medium platy soil fragments; very firm; few fine distinct white (5Y 8/1) soft masses of lime between peds; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 16 inches

Other features: Some pedons have a Bkg horizon.

Ap horizon:

Hue—10YR or N

Value—2

Chroma—0 or 1

Texture—loam or clay

Bg horizon:

Hue—2.5Y or 5Y

Value—3 to 5

Chroma—1 or 2

Texture—silty clay loam, silty clay, or clay

Cg horizon:

Hue—2.5Y or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—silty clay, clay, silty clay loam, or silt loam that has bands of clay

1448—Grano clay, MAP 18-22, 0 to 2 percent slopes***Component Descriptions*****Grano and similar soils***Extent:* 90 percent of the unit*Geomorphic description:* Flats on lake plains; swales on lake plains*Slope range:* 0 to 2 percent*Texture of the surface layer:* Clay*Depth to restrictive feature:* Very deep (more than 60 inches)*Drainage class:* Poorly drained*Parent material:* Glaciolacustrine deposits*Flooding:* None*Wet soil moisture status is highest (depth, months):* At the surface (April)*Wet soil moisture status is lowest (depth, months):* 3.0 feet (August)*Ponding does not occur (months):* January, February, March, December*Ponding is deepest (depth, months):* 0.3 foot (April, May, June, November)*Available water capacity to a depth of 60 inches:* 9.9 inches*Content of organic matter in the upper 10 inches:* 4.5 percent**Percy and similar soils***Extent:* 5 percent of the unit*Geomorphic description:* Flats on lake plains; swales on lake plains*Slope range:* 0 to 2 percent*Texture of the surface layer:* Loam*Depth to restrictive feature:* Very deep (more than 60 inches)*Drainage class:* Poorly drained*Parent material:* Till*Flooding:* None*Wet soil moisture status is highest (depth, months):* 0.5 foot (April)*Wet soil moisture status is lowest (depth, months):* 3.8 feet (August)*Ponding does not occur (months):* January, February, March, July, August, December*Ponding is deepest (depth, months):* 0.3 foot (April, May, June, September, October, November)
Available water capacity to a depth of 60 inches: 10.1 inches*Content of organic matter in the upper 10 inches:* 6.5 percent**Augsburg and similar soils***Extent:* 3 percent of the unit*Geomorphic description:* Flats on lake plains; swales on lake plains*Slope range:* 0 to 2 percent*Texture of the surface layer:* Loam*Depth to restrictive feature:* Very deep (more than 60 inches)*Drainage class:* Poorly drained*Parent material:* Glaciolacustrine deposits*Flooding:* None*Wet soil moisture status is highest (depth, months):* 0.5 foot (April)*Wet soil moisture status is lowest (depth, months):* 3.8 feet (August)*Ponding does not occur (months):* January, February, March, July, August, December*Ponding is deepest (depth, months):* 0.3 foot (April, May, June, September, October, November)*Available water capacity to a depth of 60 inches:* 10.5 inches*Content of organic matter in the upper 10 inches:* 4.8 percent**Woodslake and similar soils***Extent:* 2 percent of the unit*Geomorphic description:* Depressions on lake plains*Slope range:* 0 to 1 percent*Texture of the surface layer:* Clay*Depth to restrictive feature:* Very deep (more than 60 inches)*Drainage class:* Very poorly drained*Parent material:* Glaciolacustrine deposits*Flooding:* None*Wet soil moisture status is highest (depth, months):* At the surface (March, April, May)*Wet soil moisture status is lowest (depth, months):* 1.6 feet (February, August)*Ponding depth:* 0.5 foot all year*Available water capacity to a depth of 60 inches:* 7.9 inches*Content of organic matter in the upper 10 inches:* 3.4 percent**Management***Major use:* Cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1449—Grano loam, MAP 18-22, 0 to 2 percent slopes

Component Descriptions

Grano and similar soils

Extent: 90 percent of the unit
Geomorphic description: Flats on lake plains; swales on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (April)
Wet soil moisture status is lowest (depth, months): 3.0 feet (August)
Ponding does not occur (months): January, February, March, December
Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)
Available water capacity to a depth of 60 inches: 9.7 inches
Content of organic matter in the upper 10 inches: 3.5 percent

Percy and similar soils

Extent: 5 percent of the unit
Geomorphic description: Swales on lake plains; flats on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 3.8 feet (August)
Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)
Available water capacity to a depth of 60 inches: 10.1 inches
Content of organic matter in the upper 10 inches: 6.5 percent

Augsburg and similar soils

Extent: 3 percent of the unit
Geomorphic description: Flats on lake plains; swales on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 3.8 feet (August)
Ponding does not occur (months): January, February, March, July, August, December
Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 4.8 percent

Woodslake and similar soils

Extent: 2 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Clay
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)
Ponding depth: 0.5 foot all year
Available water capacity to a depth of 60 inches: 7.9 inches
Content of organic matter in the upper 10 inches: 3.4 percent

Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Grimstad Series

Drainage class: Somewhat poorly drained

Permeability: Upper part—moderately rapid; lower part—moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 3 percent

Taxonomic classification: Sandy over loamy, mixed, superactive, frigid Aeric Calciaquolls

Typical Pedon

Grimstad fine sandy loam, 1,700 feet south and 100 feet east of the northwest corner of sec. 29, T. 159 N., R. 42 W.

Ap—0 to 10 inches; very dark gray (10YR 3/1) fine sandy loam, dark gray (10YR 4/1) dry; weak fine and medium subangular blocky structure; very friable; strongly effervescent; slightly alkaline; abrupt smooth boundary.

Bk—10 to 18 inches; dark gray (10YR 4/1) fine sandy loam; weak medium subangular blocky structure; very friable; strongly effervescent; moderately alkaline; clear smooth boundary.

C1—18 to 24 inches; light brownish gray (2.5Y 6/2) fine sand; few fine distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; strongly effervescent; moderately alkaline; clear wavy boundary.

C2—24 to 28 inches; light yellowish brown (2.5Y 6/3) fine sand; common fine distinct olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; clear wavy boundary.

C3—28 to 30 inches; light yellowish brown (2.5Y 6/3) fine sand; common medium faint light brownish gray (2.5Y 6/2) iron depletions and common medium distinct olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; strongly effervescent; 10 percent gravel; slightly alkaline; clear smooth boundary.

2C4—30 to 62 inches; grayish brown (2.5Y 5/2) fine sandy loam; common fine faint dark grayish brown (2.5Y 4/2) iron depletions and common medium prominent yellowish brown (10YR 5/6) iron

concentrations; massive; friable; strongly effervescent; 2 percent gravel and 3 percent cobbles; moderately alkaline; gradual wavy boundary.

2C5—62 to 80 inches; grayish brown (2.5Y 5/2) fine sandy loam; common fine faint dark grayish brown (2.5Y 4/2) iron depletions and many coarse prominent yellowish brown (10YR 5/6) iron concentrations; massive; friable; strongly effervescent; 2 percent gravel and 5 percent cobbles; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 14 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—fine sandy loam

Bk horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—1 to 3

Texture—fine sandy loam or loamy fine sand

C horizon:

Hue—2.5Y

Value—5 or 6

Chroma—2 to 4

Texture—fine sand or sand

Content of rock fragments—0 to 10 percent

2C horizon:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—2

Texture—fine sandy loam or loam

Content of rock fragments—0 to 10 percent

59—Grimstad fine sandy loam, 0 to 3 percent slopes

Component Descriptions

Grimstad and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):
1.5 feet (April)

Wet soil moisture status is lowest (depth, months):
More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Strathcona and similar soils

Extent: 12 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):
0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.5 inches

Content of organic matter in the upper 10 inches: 4.5 percent

Foxhome and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):
2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3 inches

Content of organic matter in the upper 10 inches: 5.0 percent

Management

Major uses: Cropland and hayland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Grygla Series

Drainage class: Poorly drained and very poorly drained

Permeability: Upper part—rapid; lower part—moderate or moderately slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits and till

Slope range: 0 to 2 percent

Taxonomic classification: Sandy over loamy, mixed, superactive, nonacid, frigid Mollic Endoaquents

Typical Pedon

Grygla loamy fine sand, 1,700 feet south and 100 feet east of the northwest corner of sec. 34, T. 159 N., R. 41 W.

A—0 to 6 inches; black (10YR 2/1) loamy fine sand, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; many fine and very fine roots; neutral; clear smooth boundary.

Bg—6 to 26 inches; grayish brown (2.5Y 6/2) fine sand; common fine prominent dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; few fine and very fine roots; 2 percent cobbles; neutral; clear smooth boundary.

2BCKg—26 to 42 inches; grayish brown (2.5Y 6/2) loam; many fine distinct dark yellowish brown (10YR 4/6) iron concentrations; weak coarse subangular blocky structure; friable; few fine roots; common fine distinct white (10YR 8/1) soft masses of lime on faces of peds; 5 percent gravel and 2 percent cobbles; strongly effervescent; moderately alkaline; gradual wavy boundary.

2Cg—42 to 80 inches; grayish brown (2.5Y 5/2) loam; many fine distinct dark yellowish brown (10YR 4/6) iron concentrations; few fine distinct black (N 2/0) manganese nodules; massive; firm; 10 percent gravel and 2 percent cobbles; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 20 to 40 inches

Other features: Some pedons have a Cg horizon. This horizon has colors and textures similar to those of the Bg horizon.

A or Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1

Texture—loamy fine sand or mucky loamy fine sand

Content of rock fragments—0 to 2 percent

Bg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—sand, loamy sand, fine sand, or loamy fine sand

Content of rock fragments—0 to 2 percent

2BCkg horizon:

Hue—2.5Y

Value—5 or 6

Chroma—2

Texture—sandy loam, fine sandy loam, or loam

Content of rock fragments—3 to 15 percent

2Cg horizon:

Hue—2.5Y

Value—5 to 7

Chroma—2

Texture—sandy loam, fine sandy loam, loam, or silt loam

Content of rock fragments—3 to 15 percent

482—Grygla loamy fine sand, 0 to 2 percent slopes

Component Descriptions

Grygla and similar soils

Extent: 85 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Chilgren and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.4 inches

Content of organic matter in the upper 10 inches: 1.4 percent

Grygla, depressional, and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 3.0 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 7.8 inches

Content of organic matter in the upper 10 inches: 3.1 percent

Enstrom and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.1 inches

Content of organic matter in the upper 10 inches: 1.5 percent

Northwood and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 67.5 percent

Management

Major uses: Forest land, pasture, and cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section

- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1401—Grygla mucky loamy fine sand, depressional, 0 to 1 percent slopes

Component Descriptions

Grygla, depressional, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 3.0 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 7.8 inches

Content of organic matter in the upper 10 inches: 3.1 percent

Northwood, wooded, and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.9 inches

Content of organic matter in the upper 10 inches: 67.5 percent

Chilgren and similar soils

Extent: 3 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.4 inches

Content of organic matter in the upper 10 inches: 1.4 percent

Grygla and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Hangaard Series

Drainage class: Poorly drained

Permeability: Rapid

Landform: Beach plains

Parent material: Beach deposits

Slope range: 0 to 2 percent

Taxonomic classification: Sandy, mixed, frigid Typic Endoaquolls

Typical Pedon

Hangaard sandy loam, 150 feet south and 2,100 feet east of the northwest corner of sec. 7, T. 159 N., R. 40 W.

Ap—0 to 12 inches; black (10YR 2/1) sandy loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; many very fine and fine roots; slightly alkaline; clear wavy boundary.

Cg1—12 to 17 inches; light brownish gray (2.5Y 6/2) coarse sand; few medium distinct light olive brown (2.5Y 5/6) and common fine prominent yellowish brown (10YR 5/6) iron concentrations; single grain; loose; common very fine roots; slightly effervescent; 5 percent gravel; slightly alkaline; clear wavy boundary.

Cg2—17 to 25 inches; gray (5Y 6/1) very gravelly coarse sand; few fine prominent yellowish brown (10YR 5/6), common fine prominent yellowish brown (10YR 5/4), and few fine prominent light yellowish brown (2.5Y 6/4) iron concentrations; single grain; loose; common very fine roots; slightly effervescent; 40 percent gravel; slightly alkaline; clear wavy boundary.

Cg3—25 to 46 inches; light olive gray (5Y 6/2) gravelly coarse sand; many fine prominent yellowish brown (10YR 5/4 and 5/6), common fine prominent olive yellow (2.5Y 6/6), and common fine distinct brownish yellow (10YR 6/8) iron concentrations;

single grain; loose; slightly effervescent; 20 percent gravel; slightly alkaline; clear wavy boundary.

Cg4—46 to 58 inches; gray (5Y 6/1) gravelly coarse sand; common medium prominent light olive brown (2.5Y 5/6) and few fine distinct olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; slightly effervescent; 20 percent mixed gravel; slightly alkaline; clear wavy boundary.

Cg5—58 to 80 inches; gray (5Y 6/1) gravelly coarse sand; common medium prominent light olive brown (2.5Y 5/6) and few fine prominent olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; slightly effervescent; 25 percent gravel; moderately alkaline.

Range in Characteristics

Depth to carbonates: 12 to 16 inches

Thickness of the mollic epipedon: 7 to 14 inches

Ap horizon:

Hue—10YR or 2.5Y

Value—2 or 3

Chroma—1 or 2

Texture—sandy loam

Content of rock fragments—0 to 10 percent

Cg horizon:

Hue—2.5Y or 5Y

Value—5 or 6

Chroma—1 or 2

Texture—fine sand, sand, or coarse sand

Content of rock fragments—0 to 50 percent

111—Hangaard sandy loam, 0 to 2 percent slopes

Component Descriptions

Hangaard and similar soils

Extent: 90 percent of the unit

Geomorphic description: Flats on beach plains; swales on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, October, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 2.9 inches

Content of organic matter in the upper 10 inches: 5.5 percent

Deerwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.1 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Rushlake and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on beach plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 3.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.0 inches

Content of organic matter in the upper 10 inches: 1.9 percent

Rosewood and similar soils

Extent: 2 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 5.5 percent

Management

Major uses: Cropland and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Haug Series

Drainage class: Very poorly drained

Permeability: Moderate

Landform: Lake plains

Parent material: Organic materials over till

Slope range: 0 to 1 percent

Taxonomic classification: Coarse-loamy, mixed, superactive, calcareous, frigid Histic Humaquepts

Typical Pedon

Haug muck, 350 feet north and 700 feet east of the southwest corner of sec. 24, T. 161 N., R. 42 W.

Oa—0 to 10 inches; muck, black (10YR 2/1) broken face and rubbed; about 20 percent fiber, 10

percent rubbed; weak thin platy structure; very friable; many very fine and fine roots and few medium roots; neutral; clear wavy boundary.

A—10 to 16 inches; very dark gray (10YR 3/1) loam; few fine distinct dark yellowish brown (10YR 3/4) iron concentrations; moderate fine subangular blocky structure; friable; common very fine and fine roots; strongly effervescent; slightly alkaline; clear wavy boundary.

Bg—16 to 28 inches; light gray (5Y 7/2) loam; common fine prominent yellowish brown (10YR 5/6) and few fine prominent brownish yellow (10YR 6/6) iron concentrations; moderate fine subangular blocky structure; friable; few very fine roots; strongly effervescent; 2 percent gravel; slightly alkaline; gradual wavy boundary.

Cg—28 to 80 inches; light brownish gray (2.5Y 6/2) loam; common medium distinct light olive brown (2.5Y 5/6) and olive yellow (2.5Y 6/6) and few fine distinct yellowish brown (10YR 5/6) iron concentrations; massive; few very fine roots; strongly effervescent; 2 percent gravel; moderately alkaline.

Range in Characteristics

Depth to carbonates: 9 to 11 inches

Thickness of the organic material: 8 to 16 inches

Oa horizon:

Hue—7.5YR, 10YR, 2.5Y, or N

Value—2 or 3

Chroma—0 to 2

Texture—muck

A horizon:

Hue—10YR, 2.5Y, or N

Value—2 or 3

Chroma—0 to 2

Texture—fine sandy loam, loam, silt loam, or the mucky analogs of these textures

Content of rock fragments—2 to 10 percent

Bg horizon:

Hue—5Y

Value—4 to 7

Chroma—1 or 2

Texture—fine sandy loam, sandy loam, or loam

Content of rock fragments—2 to 10 percent

Cg horizon:

Hue—2.5Y or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—fine sandy loam, sandy loam, or loam

Content of rock fragments—2 to 10 percent

187—Haug muck, 0 to 1 percent slopes**Component Descriptions****Haug and similar soils**

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Percy and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.5 percent

Cathro and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 19.8 inches

Content of organic matter in the upper 10 inches: 72.5 percent

Boash and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.6 inches

Content of organic matter in the upper 10 inches: 4.3 percent

Management

Major uses: Pasture and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section

- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Hilaire Series

Drainage class: Moderately well drained

Permeability: Upper part—rapid; lower part—slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 3 percent

Taxonomic classification: Sandy over clayey, mixed over smectitic, frigid Aquic Hapludolls

Typical Pedon

Hilaire fine sandy loam, 2,350 feet north and 600 feet east of the southwest corner of sec. 32, T. 162 N., R. 37 W.

Ap—0 to 7 inches; black (10YR 2/1) fine sandy loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure; very friable; few very fine roots; slightly alkaline; abrupt smooth boundary.

A—7 to 13 inches; black (10YR 2/1) fine sandy loam; weak fine subangular blocky structure; very friable; few very fine roots; common grayish brown (10YR 5/2) and light brownish gray (10YR 6/2) Bw1 material on faces of peds and in pores; slightly alkaline; clear smooth boundary.

Bw1—13 to 19 inches; light olive brown (2.5Y 5/3) loamy fine sand; few fine distinct dark yellowish brown (10YR 4/6) iron concentrations; weak fine subangular blocky structure; very friable; few very fine roots; slightly alkaline; clear smooth boundary.

Bw2—19 to 33 inches; brown (10YR 5/3) loamy fine sand; many fine faint grayish brown (10YR 5/2) iron depletions and common fine distinct strong brown (7.5YR 4/6) iron concentrations; weak fine subangular blocky structure; very friable; few very fine roots; slightly effervescent; slightly alkaline; abrupt wavy boundary.

2Bk1—33 to 42 inches; stratified dark grayish brown (2.5Y 4/2) clay and light yellowish brown (2.5Y 6/3) silt loam; few fine faint light olive brown (2.5Y 5/6) iron concentrations; moderate medium platy structure parting to weak fine subangular blocky; firm; many fine distinct white (2.5Y 8/2) carbonate coats on faces of peds and in pores; slightly effervescent; moderately alkaline; clear wavy boundary.

2Bk2—42 to 80 inches; stratified dark grayish brown (2.5Y 4/2) clay and light yellowish brown (2.5Y 6/3) silt loam; few fine faint light olive brown (2.5Y 5/6) iron concentrations; moderate medium platy

structure parting to weak fine subangular blocky; firm; many fine distinct white (2.5Y 8/2) carbonate coats on faces of peds and in pores; slightly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 7 to 35 inches

Thickness of the mollic epipedon: 7 to 13 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—fine sandy loam

Bw horizon:

Hue—2.5Y or 10YR

Value—4 to 6

Chroma—3 or 4

Texture—fine sand or loamy fine sand

2Bk horizon:

Hue—2.5Y or 5Y

Value—4 or 5

Chroma—1 or 2

Texture—clay, silty clay, or clay stratified with silt loam

1305—Hilaire fine sandy loam, 0 to 3 percent slopes

Component Descriptions

Hilaire and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.0 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Espelle and similar soils

Extent: 11 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 7.7 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Grano and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.7 inches

Content of organic matter in the upper 10 inches: 3.5 percent

Redby and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Management

Major uses: Cropland and hayland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Hiwood Series

Drainage class: Moderately well drained

Permeability: Rapid

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 1 to 6 percent

Taxonomic classification: Mixed, frigid Aquic Udipsamments

Typical Pedon

Hiwood fine sand, 300 feet north and 1,100 feet west of the southeast corner of sec. 34, T. 162 N., R. 35 W.

A—0 to 2 inches; black (10YR 2/1) fine sand, dark gray (10YR 4/1) dry; weak fine granular structure parting to single grain; loose, very friable; many fine and few medium roots; strongly acid; clear smooth boundary.

E—2 to 3 inches; brown (10YR 5/3) fine sand, light gray (10YR 7/1) dry; single grain; loose; many fine roots; moderately acid; clear wavy boundary.

Bw1—3 to 12 inches; dark yellowish brown (10YR 4/6) fine sand; single grain; loose; common medium and many fine roots; strongly acid; clear wavy boundary.

Bw2—12 to 22 inches; yellowish brown (10YR 5/4) fine sand; single grain; loose; common medium and fine roots; moderately acid; gradual wavy boundary.

- C1—22 to 34 inches; light yellowish brown (10YR 6/4) fine sand; few fine distinct yellowish brown (10YR 5/6) iron concentrations and few fine distinct light brownish gray (10YR 6/2) iron depletions; single grain; loose; strongly acid; gradual wavy boundary.
- C2—34 to 42 inches; light yellowish brown (10YR 6/4) fine sand; many medium distinct yellowish brown (10YR 5/6) and few fine prominent brown or dark brown (7.5YR 4/4) iron concentrations and common fine prominent light brownish gray (2.5Y 6/2) iron depletions; single grain; loose; strongly acid; clear wavy boundary.
- C3—42 to 55 inches; light brownish gray (2.5Y 6/2) fine sand; common medium distinct yellowish brown (10YR 5/6) and few fine distinct brownish yellow (2.5Y 6/6) iron concentrations; single grain; loose; strongly acid; gradual wavy boundary.
- C4—55 to 80 inches; light brownish gray (2.5Y 6/2) fine sand; many coarse distinct dark yellowish brown (10YR 4/6), common medium prominent yellowish brown (10YR 5/6), and few fine prominent brownish yellow (10YR 6/6) iron concentrations; single grain; loose; moderately acid.

Range in Characteristics

Depth to carbonates: More than 60 inches

A or Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—fine sand or loamy fine sand

E horizon:

Hue—10YR

Value—4 to 6

Chroma—1 to 3

Texture—fine sand or loamy fine sand

Bw horizon:

Hue—10YR

Value—4 to 6

Chroma—3 to 6

Texture—fine sand or sand

Content of rock fragments—0 to 2 percent

C horizon:

Hue—10YR or 2.5Y

Value—5 to 7

Chroma—2 to 4

Texture—fine sand or sand

Content of rock fragments—0 to 2 percent

48B—Hiwood fine sand, 1 to 6 percent slopes

Component Descriptions

Hiwood and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.7 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Redby and similar soils

Extent: 7 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Clearriver and similar soils

Extent: 3 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, backslopes

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months):
3.0 feet (April)

Wet soil moisture status is lowest (depth, months):
More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 3.5 inches

Content of organic matter in the upper 10 inches: 0.5 percent

Cormant and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):
0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

Zimmerman and similar soils

Extent: 2 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Management

Major uses: Forest land; hayland and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Huot Series

Drainage class: Moderately well drained

Permeability: Upper part—moderately rapid; lower part—slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 3 percent

Taxonomic classification: Sandy over clayey, mixed over smectitic, frigid Aquic Calciudolls

Typical Pedon

Huot fine sandy loam, 2,600 feet north and 1,500 feet west of the southeast corner of sec. 32, T. 151 N., R. 36 W., in Polk County, Minnesota:

Ap—0 to 10 inches; black (10YR 2/1) fine sandy loam, very dark gray (10YR 3/1) dry; weak medium subangular blocky structure parting to weak fine granular; very friable; few fine roots; very slightly effervescent; slightly alkaline; abrupt smooth boundary.

Ak—10 to 14 inches; very dark gray (10YR 3/1) fine sandy loam, gray (10YR 5/1) dry; weak medium subangular blocky structure; very friable; few very fine roots; violently effervescent with disseminated lime; moderately alkaline; clear wavy boundary.

Bk—14 to 26 inches; dark grayish brown (10YR 4/2) loamy fine sand; weak fine subangular blocky structure; very friable; 1 percent gravel; violently effervescent with disseminated lime; moderately alkaline; gradual wavy boundary.

C1—26 to 34 inches; light olive brown (2.5Y 5/4) fine sand; single grain; loose; common medium distinct grayish brown (2.5Y 5/2) iron depletions; 2 percent gravel and 1 percent cobbles mostly in a lag line at the till contact; slightly effervescent; slightly alkaline; abrupt smooth boundary.

2C2—34 to 60 inches; olive gray (5Y 4/2) clay; moderate medium prismatic soil fragments parting

to moderate fine and medium angular blocky; firm; common fine distinct very dark grayish brown (2.5Y 3/2) iron depletions; about 1 percent gravel and 1 percent cobbles; slightly effervescent; slightly alkaline; gradual wavy boundary.

2C3—60 to 80 inches; light brownish gray (2.5Y 6/2) clay; moderate medium angular blocky soil fragments; firm; common medium prominent strong brown (7.5YR 5/8) iron concentrations; about 4 percent gravel and 1 percent cobbles; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 14 inches

Ap or A horizon:

Hue—10YR or N

Value—2

Chroma—0 or 1

Texture—fine sandy loam

Bk horizon:

Hue—10YR

Value—4 or 5

Chroma—1 or 2

Texture—fine sandy loam or loamy fine sand

C horizon:

Hue—2.5Y

Value—5 or 6

Chroma—2 to 4

Texture—fine sand or loamy fine sand

Content of rock fragments—0 to 5 percent

2C horizon:

Hue—2.5Y or 5Y

Value—3 to 5

Chroma—2

Texture—clay

643—Huot fine sandy loam, 0 to 3 percent slopes

Component Descriptions

Huot and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):
2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 7.9 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Thief river and similar soils

Extent: 12 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):
0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 7.6 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Redby and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):
1.5 feet (April)

Wet soil moisture status is lowest (depth, months):
More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Management

Major uses: Cropland and hayland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Karlsruhe Series

Drainage class: Moderately well drained

Permeability: Upper part—moderately rapid; lower part—rapid

Landform: Beach plains

Parent material: Beach deposits

Slope range: 0 to 3 percent

Taxonomic classification: Sandy, mixed, frigid Aeric Calciaquolls

Typical Pedon

Karlsruhe sandy loam, 650 feet south and 200 feet west of the northeast corner of sec. 18, T. 162 N., R. 40 W.

Ap—0 to 8 inches; black (10YR 2/1) sandy loam, very dark gray (10YR 3/1) dry; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; many very fine roots; slightly effervescent; 2 percent gravel; slightly alkaline; clear smooth boundary.

Bk—8 to 16 inches; dark gray (10YR 4/1) sandy loam; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; common very fine roots; common faint gray (10YR 5/1) carbonate coats on faces of peds and in pores; violently effervescent; 2 percent gravel; moderately alkaline; clear wavy boundary.

C1—16 to 20 inches; brown (10YR 5/3) gravelly coarse sand; common fine prominent dark yellowish brown (10YR 4/6) and few fine faint light yellowish brown (2.5Y 6/4) iron concentrations; single grain; loose; few very fine roots; slightly effervescent; 15 percent gravel; slightly alkaline; clear wavy boundary.

C2—20 to 26 inches; light yellowish brown (10YR 6/4) coarse sand; common fine prominent olive yellow (2.5Y 6/6) and few fine distinct yellowish brown (10YR 5/6) iron concentrations; single grain; loose; slightly effervescent; 6 percent gravel; slightly alkaline; gradual wavy boundary.

C3—26 to 34 inches; light yellowish brown (2.5Y 6/3)

coarse sand; many medium prominent brownish yellow (10YR 6/6) and common fine distinct yellowish brown (10YR 5/6) iron concentrations; single grain; loose; slightly effervescent; 3 percent gravel; slightly alkaline; gradual wavy boundary.

C4—34 to 45 inches; light yellowish brown (2.5Y 6/3) coarse sand; few fine prominent brownish yellow (10YR 6/6) and common fine distinct yellowish brown (10YR 5/6) iron concentrations; single grain; loose; slightly effervescent; 3 percent gravel; slightly alkaline; gradual wavy boundary.

C5—45 to 68 inches; light yellowish brown (2.5Y 6/3) sand; few fine faint light yellowish brown (2.5Y 6/4) and few fine prominent yellowish brown (10YR 5/6) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; gradual wavy boundary.

C6—68 to 80 inches; light brownish gray (2.5Y 6/2) sand; common medium distinct olive yellow (2.5Y 6/6) and few fine prominent yellowish brown (10YR 5/6) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 8 to 14 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—sandy loam

Content of rock fragments—0 to 2 percent

Bk horizon:

Hue—10YR

Value—4 or 5

Chroma—1

Texture—sandy loam or coarse sandy loam

Content of rock fragments—0 to 5 percent

C horizon:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—2 to 4

Texture—sand or coarse sand

Content of rock fragments—0 to 25 percent

1428—Karlsruhe sandy loam, MAP 18-22, 0 to 3 percent slopes

Component Descriptions

Karlsruhe and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on beach plains

Slope range: 0 to 3 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Beach deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 2.0 feet (April)
Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 4.2 inches
Content of organic matter in the upper 10 inches: 4.8 percent

Syrene and similar soils

Extent: 10 percent of the unit
Geomorphic description: Swales on beach plains; flats on beach plains
Slope range: 0 to 2 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Beach deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 0.3 foot (April)
Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)
Ponding does not occur (months): January, February, March, July, August, September, October, November, December
Ponding is deepest (depth, months): 0.3 foot (April, May)
Available water capacity to a depth of 60 inches: 4.3 inches
Content of organic matter in the upper 10 inches: 5.5 percent

Ulen and similar soils

Extent: 5 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 2.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)
Ponding: None
Available water capacity to a depth of 60 inches: 5.1 inches
Content of organic matter in the upper 10 inches: 3.5 percent

Management

Major uses: Hayland, pasture, and cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Karlstad Series

Drainage class: Moderately well drained
Permeability: Upper part—moderately rapid; lower part—rapid
Landform: Beach ridges
Parent material: Beach deposits
Slope range: 0 to 3 percent
Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Aquic Hapludalfs

Typical Pedon

Karlstad loamy sand, 1,650 feet south and 150 feet west of the northeast corner of sec. 22, T. 159 N., R. 41 W.

- Ap—0 to 6 inches; very dark gray (10YR 3/1) loamy sand, dark grayish brown (10YR 4/2) dry; weak medium subangular blocky structure; very friable; many very fine and fine roots; neutral; abrupt smooth boundary.
- E—6 to 7 inches; brown (10YR 4/3) loamy sand; single grain; loose; many very fine and fine roots; neutral; clear wavy boundary.
- Bt1—7 to 10 inches; dark yellowish brown (10YR 4/4) sandy loam; weak medium subangular blocky structure; friable; common very fine and fine roots; common distinct discontinuous brown (10YR 4/3) clay films on faces of peds; 5 percent gravel; neutral; clear wavy boundary.
- 2Bt2—10 to 14 inches; dark yellowish brown (10YR 4/4) gravelly sandy loam; few fine faint dark grayish brown (10YR 4/2) iron depletions; weak medium subangular blocky structure; friable; common distinct discontinuous brown (10YR 4/3)

clay films on faces of peds; 15 percent gravel; neutral; clear wavy boundary.

2C1—14 to 54 inches; light brownish gray (2.5Y 6/2) sand; few fine prominent strong brown (7.5YR 5/6) iron concentrations; single grain; loose; slightly effervescent; 3 percent gravel; slightly alkaline; gradual wavy boundary.

2C2—54 to 80 inches; light brownish gray (2.5Y 6/2) sand; common fine and medium prominent strong brown (7.5YR 5/6) iron concentrations; single grain; loose; slightly effervescent; 3 percent gravel; slightly alkaline.

Range in Characteristics

Depth to carbonates: 9 to 29 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loamy sand

Content of rock fragments—0 to 5 percent

E horizon:

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—loamy sand

Content of rock fragments—0 to 5 percent

Bt horizon:

Hue—10YR or 7.5YR

Value—3 or 4

Chroma—3 or 4

Texture—coarse sandy loam, sandy loam, or sandy clay loam

Content of rock fragments—2 to 10 percent

2Bt horizon:

Hue—10YR or 7.5YR

Value—3 to 5

Chroma—2 to 4

Texture—sandy loam or coarse sandy loam

Content of rock fragments—15 to 35 percent

2C horizon:

Hue—2.5Y or 10YR

Value—5 or 6

Chroma—2 or 3

Texture—sand, coarse sand, or loamy coarse sand

Content of rock fragments—0 to 50 percent

205—Karlstad loamy sand, 0 to 3 percent slopes

Component Descriptions

Karlstad and similar soils

Extent: 85 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Backslopes

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 3.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 3.2 inches

Content of organic matter in the upper 10 inches: 2.1 percent

Sahkahtay and similar soils

Extent: 7 percent of the unit

Geomorphic description: Flats on beach plains; swales on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.0 inches

Content of organic matter in the upper 10 inches: 1.6 percent

Marquette and similar soils

Extent: 5 percent of the unit

Geomorphic description: Beach ridges
Position on the landform: Shoulders, summits
Slope range: 1 to 8 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Beach deposits
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.3 inches
Content of organic matter in the upper 10 inches: 1.6 percent

Redby and similar soils

Extent: 2 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 1.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)
Ponding: None
Available water capacity to a depth of 60 inches: 4.8 inches
Content of organic matter in the upper 10 inches: 0.6 percent

Pits, gravel

Extent: 1 percent of the unit
Slope range: 1 to 50 percent
Definition: Areas from which sand and gravel have been removed

Management

Major uses: Pasture, hayland, and forest land

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1327B—Karlstad-Marquette complex, 0 to 8 percent slopes

Component Descriptions

Karlstad and similar soils

Extent: 65 percent of the unit
Geomorphic description: Beach ridges
Position on the landform: Backslopes
Slope range: 0 to 2 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Beach deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 3.0 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)
Ponding: None
Available water capacity to a depth of 60 inches: 3.3 inches
Content of organic matter in the upper 10 inches: 2.5 percent

Marquette and similar soils

Extent: 25 percent of the unit
Geomorphic description: Beach ridges
Position on the landform: Shoulders, summits
Slope range: 1 to 8 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Beach deposits
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.5 inches
Content of organic matter in the upper 10 inches: 2.0 percent

Sahkahtay and similar soils

Extent: 7 percent of the unit
Geomorphic description: Flats on beach plains; swales on beach plains
Slope range: 0 to 2 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months):
0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3
feet (February, August)

Ponding does not occur (months): January, February,
March, July, August, September, November,
December

Ponding is deepest (depth, months): 0.3 foot (April,
May)

Available water capacity to a depth of 60 inches: 4.0
inches

Content of organic matter in the upper 10 inches: 1.6
percent

Redby and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60
inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):
1.5 feet (April)

Wet soil moisture status is lowest (depth, months):
More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8
inches

Content of organic matter in the upper 10 inches: 0.6
percent

Management

Major uses: Pasture, hayland, and forest land

For general and detailed information about
managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Kratka Series

Drainage class: Very poorly drained and poorly
drained

Permeability: Upper part—moderately rapid; lower
part—moderately slow or moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 2 percent

Taxonomic classification: Sandy over loamy, mixed,
superactive, frigid Typic Endoaquolls

Typical Pedon

Kratka fine sandy loam, 300 feet north and 2,000 feet
west of the southeast corner of sec. 27, T. 159 N., R.
38 W.

Ap—0 to 8 inches; black (10YR 2/1) fine sandy loam,
very dark gray (10YR 3/1) dry; weak fine
subangular blocky structure parting to weak fine
granular; friable; many very fine and fine roots;
slightly effervescent; neutral; clear wavy boundary.

ABg—8 to 14 inches; dark grayish brown (10YR 3/2)
loamy fine sand; few fine distinct dark yellowish
brown (10YR 3/4) iron concentrations; weak fine
subangular blocky structure parting to single grain;
friable; common very fine roots; neutral; clear
wavy boundary.

Bg—14 to 22 inches; grayish brown (2.5Y 5/2) fine
sand; many coarse distinct dark yellowish brown
(10YR 4/6) and common fine distinct dark
yellowish brown (10YR 3/6) iron concentrations;
weak fine subangular blocky structure parting to
single grain; very friable; few very fine roots;
neutral; abrupt wavy boundary.

2Bkg1—22 to 36 inches; grayish brown (2.5Y 5/2)
loam; many medium prominent dark yellowish
brown (10YR 4/6) iron concentrations; weak
medium subangular blocky structure parting to
weak fine subangular blocky; friable; common faint
discontinuous light gray (2.5Y 7/2) carbonate
coats on faces of peds; violently effervescent; 2
percent gravel; slightly alkaline; gradual wavy
boundary.

2Bkg2—36 to 47 inches; grayish brown (2.5Y 5/2)
loam; many medium prominent dark yellowish
brown (10YR 4/6) iron concentrations; weak thin
platy structure parting to weak fine subangular
blocky; friable; common faint discontinuous light
gray (2.5Y 7/2) carbonate coats on faces of peds;
violently effervescent; 5 percent gravel; slightly
alkaline; gradual wavy boundary.

2Cg1—47 to 53 inches; grayish brown (2.5Y 5/2) loam;
common medium prominent yellowish red (5YR
4/6) and many medium prominent dark yellowish
brown (10YR 4/6) iron concentrations; weak
medium platy soil fragments; friable; strongly
effervescent; 7 percent gravel; slightly alkaline;
gradual wavy boundary.

2Cg2—53 to 80 inches; grayish brown (2.5Y 5/2) loam;
common coarse distinct dark yellowish brown

(10YR 4/6) and common fine prominent strong brown (7.5YR 4/6) iron concentrations; weak medium platy soil fragments; friable; strongly effervescent; 7 percent gravel; slightly alkaline.

Range in Characteristics

Depth to carbonates: 20 to 33 inches

Thickness of the mollic epipedon: 7 to 12 inches

Other features: Some pedons have a Cg horizon.

Ap or A horizon:

Hue—10YR, 2.5Y, or N

Value—2 or 3

Chroma—0 to 2

Texture—fine sandy loam or mucky fine sandy loam

Content of rock fragments—0 to 5 percent

ABg horizon:

Hue—10YR

Value—3

Chroma—2

Texture—loamy fine sand

Content of rock fragments—0 to 5 percent

Bg horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 3

Texture—sand, fine sand, loamy sand, or loamy fine sand

Content of rock fragments—0 to 5 percent

2Bkg horizon:

Hue—2.5Y or 5Y

Value—5 or 6

Chroma—2

Texture—loam

Content of rock fragments—2 to 8 percent

2Cg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—2 or 3

Texture—sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, loam, silty clay loam, or clay loam

Content of rock fragments—2 to 10 percent

481—Kratka fine sandy loam, 0 to 2 percent slopes

Component Descriptions

Kratka and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.2 inches

Content of organic matter in the upper 10 inches: 2.9 percent

Northwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 67.5 percent

Percy and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.5 percent

Enstrom and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.1 inches

Content of organic matter in the upper 10 inches: 1.5 percent

Strandquist and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 3.6 percent

Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Lallie Series

Drainage class: Very poorly drained

Permeability: Moderately slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 1 percent

Taxonomic classification: Fine, smectitic, calcareous, frigid Vertic Fluvaquents

Taxadjunct features: The Lallie soils in this survey area contain less clay than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils.

Typical Pedon

Lallie mucky silt loam, 600 feet south and 1,700 feet west of the northeast corner of sec. 36, T. 163 N., R. 41 W.

Ap—0 to 8 inches; black (10YR 2/1) mucky silt loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure; very friable; many very fine and fine roots; slightly alkaline; clear smooth boundary.

Cg1—8 to 32 inches; dark grayish brown (2.5Y 4/2) silty clay; common fine distinct light olive brown (2.5Y 5/4) iron concentrations; massive; friable; many very fine and fine roots; few fine white (2.5Y 8/1) snail shells throughout; slightly effervescent; moderately alkaline; clear wavy boundary.

Cg2—32 to 48 inches; grayish brown (2.5Y 5/2) silty clay loam; common medium distinct light yellowish

brown (2.5Y 6/4) and common fine prominent dark yellowish brown (10YR 4/6) iron concentrations; massive; friable; common very fine and fine roots; common fine white (2.5Y 8/1) snail shells throughout; strongly effervescent; slightly alkaline; gradual wavy boundary.

Cg3—48 to 55 inches; olive gray (5Y 4/2) silty clay loam with strata of gray (5Y 6/1) silt loam and very fine sand $\frac{1}{16}$ to $\frac{1}{8}$ inch thick; common fine and medium prominent olive yellow (2.5Y 6/6) and common medium prominent yellowish brown (10YR 5/6) iron concentrations; moderate thin platy soil fragments; friable; common very fine and fine roots; few fine white (2.5Y 8/1) snail shells throughout; slightly effervescent; slightly alkaline; gradual wavy boundary.

Cg4—55 to 68 inches; olive gray (5Y 4/2) silty clay loam with strata of light olive gray (5Y 6/2) silt loam and very fine sand $\frac{1}{16}$ to $\frac{1}{8}$ inch thick; common medium prominent dark yellowish brown (10YR 4/6) and common fine prominent light yellowish brown (2.5Y 6/4) iron concentrations; moderate thin platy soil fragments; friable; few fine white (2.5Y 8/1) snail shells throughout; very slightly effervescent; slightly alkaline; gradual wavy boundary.

Cg5—68 to 75 inches; olive gray (5Y 4/2) silty clay loam with strata of light olive gray (5Y 6/2) silt loam and very fine sand $\frac{1}{16}$ to $\frac{1}{8}$ inch thick; common medium prominent dark yellowish brown (10YR 4/6) and common fine prominent light yellowish brown (2.5Y 6/4) iron concentrations; moderate thin platy soil fragments; friable; very slightly effervescent; few fine white (2.5Y 8/1) snail shells throughout; slightly alkaline; gradual wavy boundary.

Cg6—75 to 80 inches; olive gray (5Y 4/2) silt loam stratified with bands of black (10YR 2/1) silt loam and very fine sandy loam $\frac{1}{16}$ to $\frac{1}{4}$ inch thick; common fine faint olive (5Y 5/3) and common fine faint pale olive (5Y 6/3) iron concentrations; moderate thin platy soil fragments; friable; few fine white (2.5Y 8/1) snail shells throughout; very slightly effervescent; slightly alkaline.

Range in Characteristics

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—mucky silt loam

Cg horizon:

Hue—2.5Y or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—silt loam, silty clay loam, or silt loam and silty clay loam stratified with very fine sandy loam and very fine sand

1405—Lallie mucky silt loam, MAP 18-22, 0 to 1 percent slopes

Component Descriptions

Lallie and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky silt loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.5 foot (January, February, March, June, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.7 foot (April, May)

Available water capacity to a depth of 60 inches: 7.9 inches

Content of organic matter in the upper 10 inches: 10.6 percent

Sax and similar soils

Extent: 7 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 14.5 inches

Content of organic matter in the upper 10 inches: 47.5 percent

Wabanica and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silt loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, July, September, October, November)

Available water capacity to a depth of 60 inches: 12.0 inches

Content of organic matter in the upper 10 inches: 2.5 percent

Management

Major use: Wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Leafriver Series

Drainage class: Very poorly drained

Permeability: Upper part—moderate or moderately rapid; lower part—rapid

Landform: Lake plains

Parent material: Organic materials over glaciolacustrine deposits

Slope range: 0 to 1 percent

Taxonomic classification: Sandy, mixed, frigid Histic Humaquepts

Typical Pedon

Leafriver muck, 350 feet south and 2,000 feet west of the northeast corner of sec. 31, T. 160 N., R. 37 W.

Oa1—0 to 9 inches; muck, very dark brown (10YR 2/2) broken face, black (10YR 2/1) rubbed; about 5 percent fiber, 1 percent rubbed; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; many very fine and fine roots; slightly acid; clear wavy boundary.

Oa2—9 to 13 inches; muck, black (10YR 2/1) broken face and rubbed; about 2 percent fiber, 1 percent rubbed; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; common very fine and fine roots; neutral; clear wavy boundary.

Cg1—13 to 38 inches; grayish brown (2.5Y 5/2) fine sand; single grain; loose; neutral; gradual wavy boundary.

Cg2—38 to 80 inches; light brownish gray (2.5Y 6/2) fine sand; single grain; loose; neutral.

Range in Characteristics

Thickness of the organic material: 8 to 16 inches

Other features: Some pedons have an A horizon.

Oa horizon:

Hue—10YR or N

Value—2

Chroma—0 to 2

Texture—muck

Content of wood fragments—0 to 5 percent

Cg horizon:

Hue—10YR to 5Y

Value—4 to 7

Chroma—2

Texture—fine sand, loamy sand, or sand

Content of rock fragments—0 to 5 percent

1402—Leafriver muck, wooded, 0 to 1 percent slopes

Component Descriptions

Leafriver, wooded, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 7.4 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Cormant and similar soils

Extent: 4 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

Tawas and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.2 inches

Content of organic matter in the upper 10 inches: 50.0 percent

Redby and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1984—Leafriver muck, 0 to 1 percent slopes

Component Descriptions

Leafriver and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.4 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Cormant and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

Markey and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 17.9 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Redby and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Management

Major uses: Pasture and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Lupton Series

Drainage class: Very poorly drained

Permeability: Moderately slow to moderately rapid

Landform: Lake plains

Parent material: Organic materials

Slope range: 0 to 1 percent

Taxonomic classification: Euic, frigid Typic Haplosaprists



Figure 2.—A profile of Baudette fine sandy loam. The surface layer (A horizon) extends to a depth of about 8 centimeters (3 inches). A layer of clay depletion (E horizon) is between the depths of 8 and 25 centimeters (3 and 10 inches). A layer of clay accumulation (Bt horizon) is between the depths of 25 and 35 centimeters (10 and 14 inches). The layer from the depth of 35 to 75 centimeters (14 to 30 inches) has an accumulation of lime (Bk horizon). This soil formed in glaciolacustrine deposits. Depth is marked in centimeters.



Figure 3.—A profile of Corliss loamy sand. The surface layer (A horizon) extends to a depth of about 4 inches. This soil formed in beach deposits and consists of stratified sand and gravel. Depth is marked in inches.

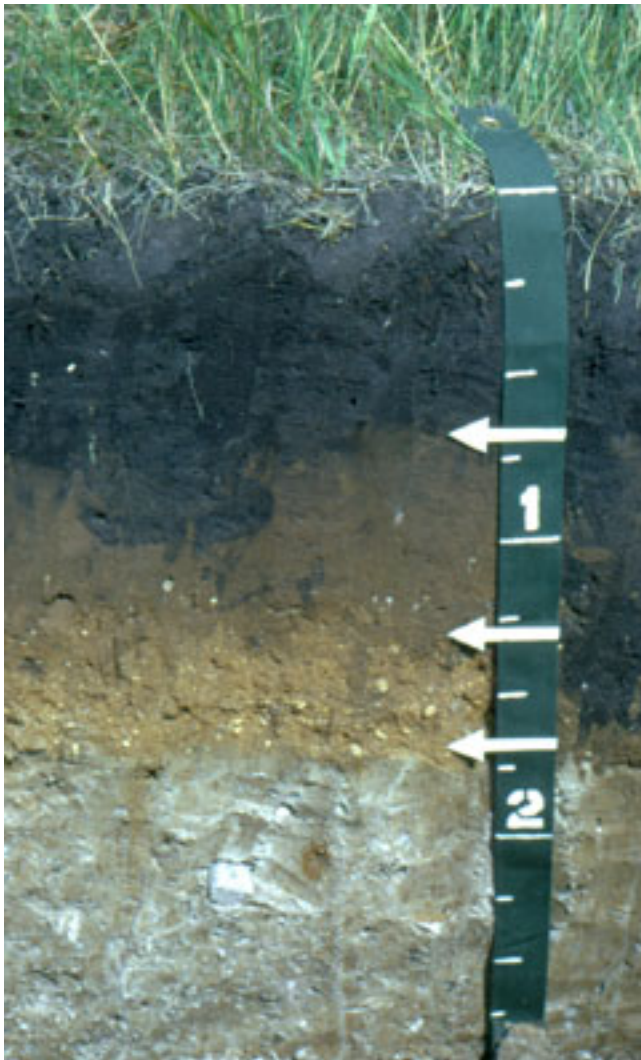


Figure 4.—A profile of a Foldahl soil. The surface layer (Ap horizon) extends to a depth of about 8 inches. A sandy mantle (Bw horizon) is between the depths of about 8 and 22 inches. Glacial till (2C horizon) begins at a depth of 22 inches. Soft masses of lime are visible in the 2C horizon. This soil formed in glaciolacustrine deposits over loamy glacial till. Depth is marked in feet.



Figure 5.—A profile of Garnes fine sandy loam. The surface layer (A horizon) extends to a depth of about 7 inches. A layer of clay depletion (E horizon) is between the depths of 7 and 14 inches, and a layer of clay accumulation (Bt horizon) is between the depths of 14 and 22 inches. A zone of calcium carbonate enrichment (Bk horizon) occurs below the Bt horizon. This soil formed in glaciolacustrine deposits and glacial till. Depth is marked in inches.



Figure 6.—A profile of Glyndon very fine sandy loam. Directly below the dark surface layer (Ap horizon) is a zone of lime accumulation (Bk horizon). This soil formed in glaciolacustrine deposits.

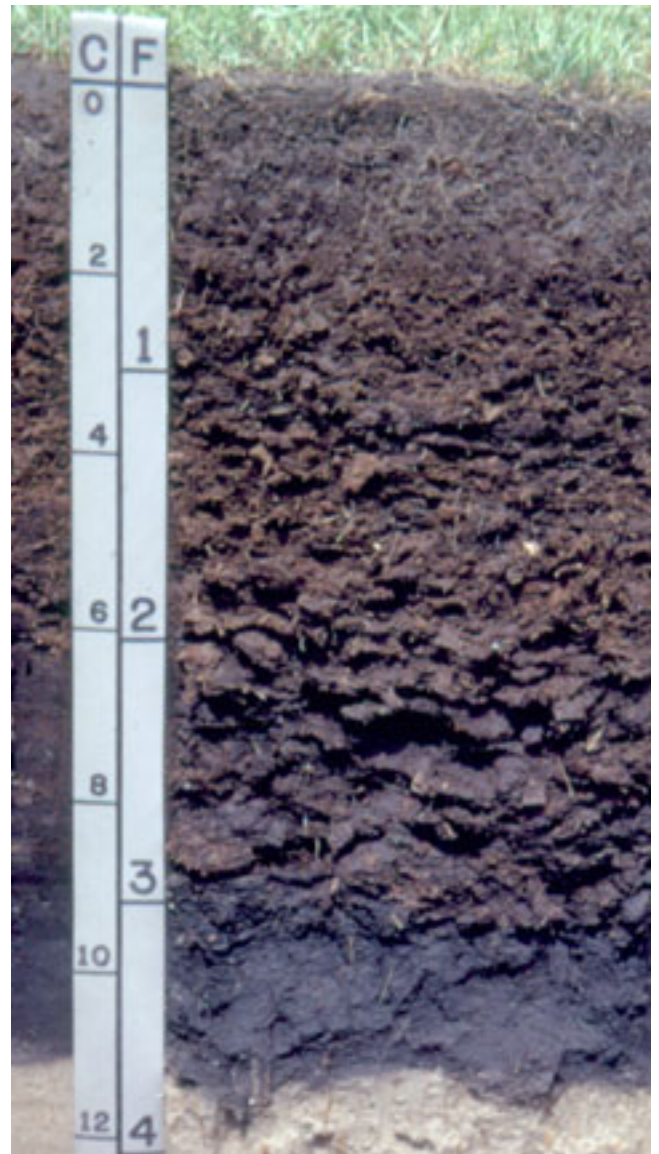


Figure 7.—A profile of Markey muck. The organic layer (Oa horizon) extends to a depth of about 45 inches. Sand begins at a depth of about 45 inches (Cg horizon). This soil formed in organic materials over glaciolacustrine deposits. Depth is marked in feet and centimeters.



Figure 8.—A profile of Marquette loamy sand. The surface layer (A horizon) extends to a depth of about 7 inches. A layer of clay depletion (E horizon) is between the depths of 7 and 19 inches, and a layer of clay accumulation (Bt horizon) is between the depths of 19 and 26 inches. Stratified sand and gravel are below a depth of 26 inches (C horizon). This soil formed in beach deposits. Depth is marked in inches.

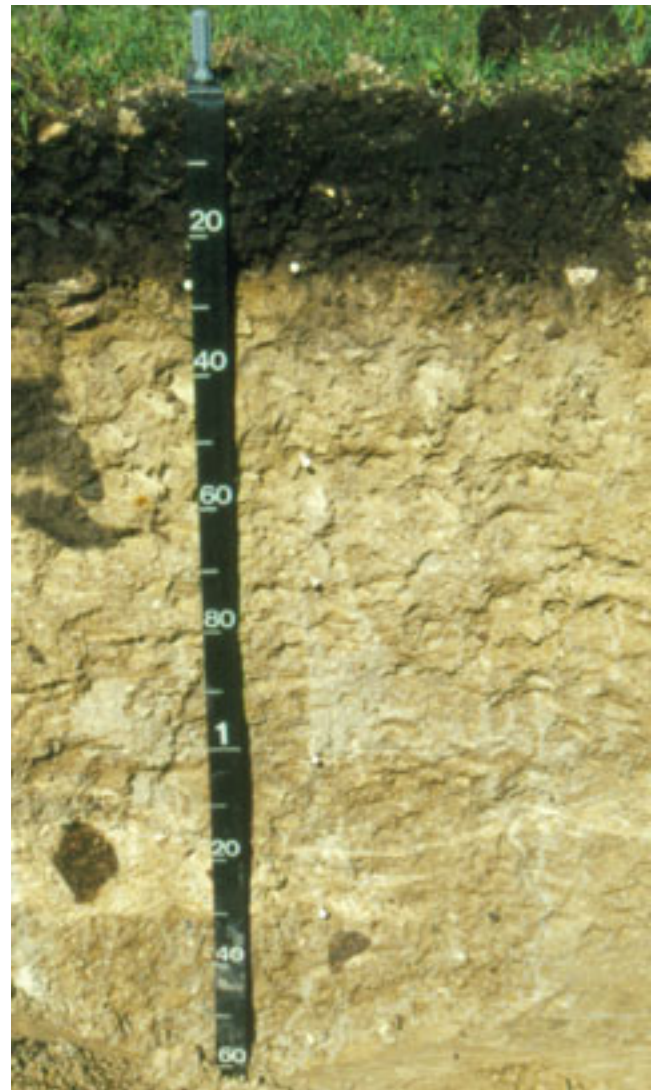


Figure 9.—A profile of Percy loam, 0 to 2 percent slopes, very cobbly. This soil formed in glacial till. The surface layer (Ap horizon) extends to a depth of about 25 centimeters (10 inches). Mottling begins directly below the surface layer. This soil has a large percentage of lime throughout the profile. Depth is marked in centimeters.

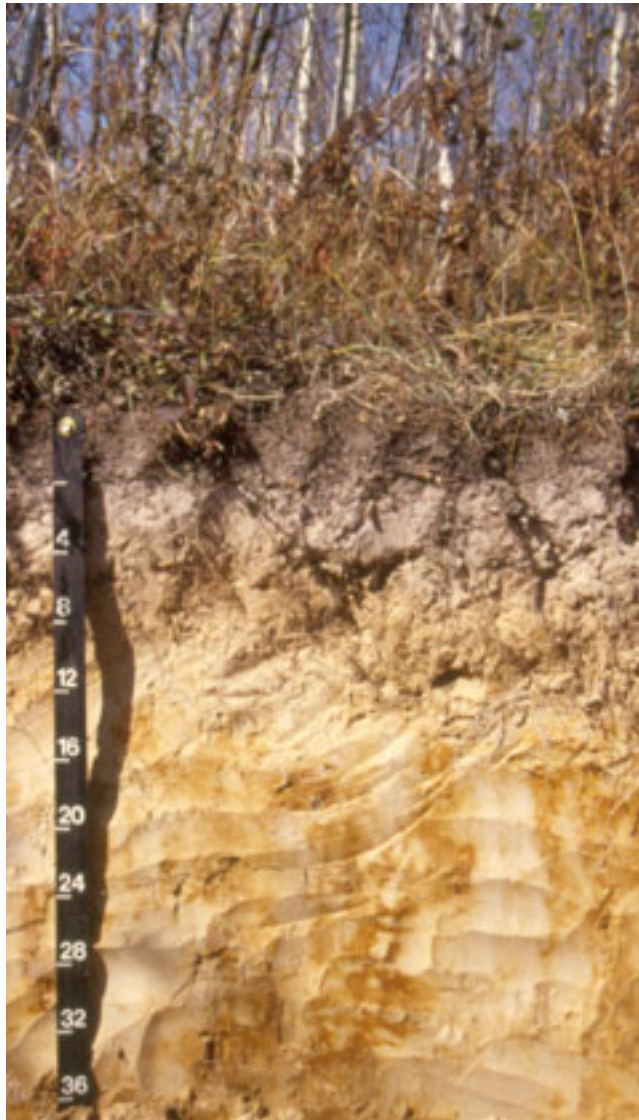


Figure 10.—A profile of Redby loamy fine sand. The surface layer (A horizon) extends to a depth of about 2 inches. A leached zone (E horizon) extends to a depth of about 5 inches. Mottling begins at a depth of about 14 inches. This soil formed in glaciolacustrine deposits. Depth is marked in inches.



Figure 11.—A profile of Strathcona fine sandy loam. The surface layer (Ap horizon) extends to a depth of about 11 inches. A layer of lime accumulation (Bkg horizon) is between the depths of 11 and 22 inches. Loamy glacial till begins at a depth of about 31 inches (2Cg horizon). This soil formed in glaciolacustrine deposits over glacial till. Depth is marked in inches.



Figure 12.—A profile of Zimmerman fine sand. The surface layer (A horizon) extends to a depth of about 3 inches. Lamellae begin at a depth of about 20 inches. The profile is leached of lime. This soil formed in beach deposits. Depth is marked in feet and centimeters.

Typical Pedon

Lupton muck, 100 feet north and 1,200 feet east of the southwest corner of sec. 26, T. 164 N., R. 40 W.

Oa1—0 to 16 inches; muck, black (N 2/0) broken face and rubbed; about 18 percent fiber, 5 percent rubbed; weak fine subangular blocky structure; very friable; many very fine roots; about 20 percent wood fragments; neutral; clear smooth boundary.

Oa2—16 to 29 inches; muck, black (5YR 2.5/1) broken face and rubbed; about 20 percent fiber, 6 percent rubbed; weak fine subangular blocky structure; very friable; about 27 percent wood fragments; neutral; clear smooth boundary.

Oa3—29 to 41 inches; muck, black (5YR 2.5/1) broken face and rubbed; about 35 percent fiber, 8 percent rubbed; weak fine subangular blocky structure; very friable; about 30 percent wood fragments; neutral; clear smooth boundary.

Oa4—41 to 80 inches; muck, black (N 2/0) broken face and rubbed; about 30 percent fiber, 7 percent rubbed; massive; very friable; about 30 percent wood fragments; neutral.

Range in Characteristics

Thickness of the organic material: More than 51 inches

Oa horizon:

Hue—5YR, 7.5YR, 10YR, or N

Value—2 or 3

Chroma—0 to 2

Texture—muck

Content of wood fragments—10 to 30 percent

546—Lupton muck, MAP 22-30, 0 to 1 percent slopes**Component Descriptions****Lupton and similar soils**

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 80.0 percent

Bullwinkle and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 22.7 inches

Content of organic matter in the upper 10 inches: 72.5 percent

Dora and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 16.8 inches

Content of organic matter in the upper 10 inches: 55.5 percent

Tawas and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.2 inches

Content of organic matter in the upper 10 inches: 50.0 percent

Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Mahkonce Series

Drainage class: Moderately well drained

Permeability: Slow

Landform: Lake plains

Parent material: Till

Slope range: 0 to 3 percent

Taxonomic classification: Fine, smectitic, frigid Aquertic Hapludalfs

Typical Pedon

Mahkonce fine sandy loam, 1,045 feet south and 2 feet east of the northwest corner of sec. 28, T. 162 N., R. 37 W.

A—0 to 3 inches; very dark gray (10YR 3/1) fine sandy loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure; friable; many fine and very fine roots; 1 percent gravel; slightly acid; abrupt wavy boundary.

E—3 to 5 inches; light brownish gray (10YR 6/2) fine sandy loam; common fine distinct dark yellowish brown (10YR 4/6) iron concentrations; weak fine subangular blocky structure; friable; many fine and very fine roots; common fine distinct very dark gray (10YR 3/1) organic coats on faces of peds; 1 percent gravel; slightly acid; clear wavy boundary.

Bt—5 to 16 inches; light olive brown (2.5Y 5/3) clay; common fine distinct grayish brown (2.5Y 5/2) iron depletions and common fine prominent dark yellowish brown (10YR 4/6) iron concentrations; weak fine prismatic structure parting to weak fine angular blocky; firm; common fine and very fine roots; many distinct discontinuous dark grayish brown (2.5Y 4/2) clay films on faces of peds; common fine distinct very dark gray (N 3/0) organic coats on faces of peds; 1 percent gravel; slightly acid; clear wavy boundary.

Btk—16 to 23 inches; light olive brown (2.5Y 5/3) silty clay; common fine distinct light brownish gray (2.5Y 6/2) iron depletions and common fine prominent dark yellowish brown (10YR 4/6) iron concentrations; weak fine prismatic structure parting to weak fine angular blocky; firm; common fine and very fine roots; many distinct discontinuous dark grayish brown (2.5Y 4/2) clay films on faces of peds; common fine distinct very dark gray (N 3/0) organic coats on faces of peds; 1 percent gravel; slightly effervescent; neutral; clear wavy boundary.

Bk—23 to 64 inches; light brownish gray (2.5Y 6/2) silty clay loam with dark grayish brown (2.5Y 4/2) bands of clay $\frac{1}{16}$ to $\frac{1}{8}$ inch thick; many fine distinct light yellowish brown (2.5Y 6/3), many fine prominent dark yellowish brown (10YR 4/6), and few fine faint pale yellow (2.5Y 7/3) iron concentrations; weak fine prismatic structure parting to weak fine subangular blocky; friable; few fine roots; common fine and medium faint white (2.5Y 8/2) threads and soft masses of lime on

faces of peds; 3 percent gravel; strongly effervescent; moderately alkaline; gradual wavy boundary.

C—64 to 80 inches; light brownish gray (2.5Y 6/2) silty clay loam with dark grayish brown (2.5Y 4/2) bands of clay $\frac{1}{16}$ to $\frac{1}{8}$ inch thick; many fine distinct light yellowish brown (2.5Y 6/3), many medium prominent dark yellowish brown (10YR 4/6), and few medium prominent dark reddish brown (5YR 3/3) iron concentrations; massive; friable; common fine and medium faint white (2.5Y 8/2) threads and soft masses of lime on faces of peds; 3 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: 16 to 26 inches

A or Ap horizon:

Hue—10YR

Value—3

Chroma—1 or 2

Texture—fine sandy loam

Content of rock fragments—1 to 2 percent

E horizon (if it occurs):

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—2

Texture—fine sandy loam

Content of rock fragments—1 to 2 percent

Bt or Btk horizon:

Hue—10YR or 2.5Y

Value—3 to 5

Chroma—2 or 3

Texture—clay loam or clay

Content of rock fragments—1 to 5 percent

Bk horizon:

Hue—2.5Y

Value—4 to 6

Chroma—2 to 4

Texture—loam, clay loam, silty clay loam, or silty clay loam stratified with clay

Content of rock fragments—1 to 5 percent

C horizon:

Hue—2.5Y

Value—5 or 6

Chroma—2 or 3

Texture—loam, clay loam, silty clay loam, or silty clay loam stratified with clay

Content of rock fragments—1 to 5 percent

737—Mahkonce fine sandy loam, 0 to 3 percent slopes

Component Descriptions

Mahkonce and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.7 inches

Content of organic matter in the upper 10 inches: 2.0 percent

Auganaush and similar soils

Extent: 10 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 10.3 inches

Content of organic matter in the upper 10 inches: 3.3 percent

Eckvoll and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.5 percent

Management

Major uses: Cropland, pasture, and forest land

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Markey Series

Drainage class: Very poorly drained

Permeability: Upper part—moderately slow to moderately rapid; lower part—rapid

Landform: Lake plains

Parent material: Organic materials over glaciolacustrine deposits

Slope range: 0 to 1 percent

Taxonomic classification: Sandy or sandy-skeletal, mixed, euic, frigid Terric Haplosaprists

Typical Pedon

Markey muck (fig. 7), 400 feet south and 2,400 feet east of the northwest corner of sec. 32, T. 160 N., R. 37 W.

Oa1—0 to 8 inches; muck, very dark brown (10YR 2/2) broken face, black (10YR 2/1) rubbed; about 5 percent fiber, 2 percent rubbed; weak fine subangular blocky structure; very friable; many very fine and common fine roots; moderately acid; gradual wavy boundary.

Oa2—8 to 15 inches; muck, very dark brown (10YR 2/2) broken face, very dark gray (10YR 3/1) rubbed; about 5 percent fiber, 2 percent rubbed;

weak fine subangular blocky structure; very friable; many very fine and common fine roots; moderately acid; gradual wavy boundary.

Oa3—15 to 24 inches; muck, very dark brown (10YR 2/2) broken face and rubbed; about 5 percent fiber, 2 percent rubbed; weak fine subangular blocky structure; very friable; many very fine and common fine roots; strongly acid; gradual wavy boundary.

Oa4—24 to 34 inches; muck, very dark brown (10YR 2/2) broken face, black (10YR 2/1) rubbed; about 5 percent fiber, 2 percent rubbed; weak fine subangular blocky structure; very friable; many very fine and fine roots; moderately acid; clear wavy boundary.

Oa5—34 to 42 inches; muck, black (10YR 2/1) broken face and rubbed; about 3 percent fiber, 2 percent rubbed; weak fine subangular blocky structure; very friable; moderately acid; clear wavy boundary.

Cg—42 to 80 inches; grayish brown (10YR 5/2) fine sand; single grain; loose; moderately acid.

Range in Characteristics

Depth to carbonates: 16 to 51 inches

Thickness of the organic material: 16 to 51 inches

Other features: Some pedons have an A horizon.

Oa horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—muck

Cg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 3

Texture—sand, loamy sand, fine sand, or loamy fine sand

Content of rock fragments—0 to 10 percent

543—Markey muck, MAP 18-22, 0 to 1 percent slopes

Component Descriptions

Markey and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 17.9 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Cormant and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

Seelyeville and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 62.0 percent

Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1808—Markey muck, ponded, MAP 22-30, 0 to 1 percent slopes

Component Descriptions

Markey, ponded, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status: At the surface all year

Ponding depth: 1.0 foot all year

Available water capacity to a depth of 60 inches: 9.3 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Leafriver and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.4 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Seelyeville, ponded, and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials

Flooding: None

Wet soil moisture status: At the surface all year

Ponding depth: 1.0 foot all year

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 62.0 percent

Cormant and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

Management

Major use: Wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Marquette Series

Drainage class: Excessively drained

Permeability: Upper part—moderately rapid; lower part—very rapid

Landform: Beach ridges

Parent material: Beach deposits

Slope range: 1 to 8 percent

Taxonomic classification: Loamy-skeletal, mixed, superactive, frigid Inceptic Hapludalfs

Typical Pedon

Marquette loamy sand (fig. 8), 250 feet south and 300 feet west of the northeast corner of sec. 31, T. 160 N., R. 40 W.

A—0 to 7 inches; black (10YR 2/1) loamy sand, dark gray (10YR 4/1) dry; weak very fine and fine granular structure; very friable; many very fine and fine roots; 5 percent gravel and 3 percent cobbles; neutral; clear smooth boundary.

Bt1—7 to 10 inches; brown (10YR 4/3) sandy loam; weak fine and medium subangular blocky structure; very friable; common very fine and fine roots; very few faint discontinuous dark brown (10YR 3/3) clay bridges and films on faces of peds; 10 percent gravel; neutral; clear wavy boundary.

Bt2—10 to 16 inches; brown (10YR 4/3) very gravelly sandy loam; weak fine subangular blocky structure; very friable; few faint discontinuous very dark grayish brown (10YR 3/2) clay films on faces of peds and few distinct patchy white (10YR 8/1) carbonate coats on the lower surface of rock fragments; slightly effervescent; 55 percent gravel

and 5 percent cobbles; neutral; clear wavy boundary.

C1—16 to 32 inches; brown (10YR 5/3) sand; single grain; loose; very few distinct patchy white (10YR 8/1) carbonate coats on the lower surface of rock fragments; slightly effervescent; 5 percent gravel and 2 percent cobbles; slightly alkaline; clear wavy boundary.

C2—32 to 70 inches; yellowish brown (10YR 5/4) extremely gravelly coarse sand; single grain; loose; very few distinct patchy white (10YR 8/1) carbonate coats on the lower surface of rock fragments; strongly effervescent; 75 percent gravel; slightly alkaline; clear wavy boundary.

C3—70 to 80 inches; brown (10YR 5/3) sand; single grain; loose; slightly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: 10 to 18 inches

Other features: Some pedons have an E horizon.

A or Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loamy sand

Content of rock fragments—0 to 10 percent

Bt horizon:

Hue—10YR or 7.5YR

Value—3 or 4

Chroma—3 or 4

Texture—sandy loam or loam

Content of rock fragments—35 to 65 percent

C horizon:

Hue—10YR

Value—5 or 6

Chroma—2 to 4

Texture—sand or coarse sand

Content of rock fragments—10 to 75 percent

242B—Marquette loamy sand, 1 to 8 percent slopes

Component Descriptions

Marquette and similar soils

Extent: 85 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits

Slope range: 1 to 8 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 3.3 inches

Content of organic matter in the upper 10 inches: 1.6 percent

Karlstad and similar soils

Extent: 14 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Backslopes

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 3.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 3.2 inches

Content of organic matter in the upper 10 inches: 2.1 percent

Pits, gravel

Extent: 1 percent of the unit

Slope range: 1 to 50 percent

Definition: Areas from which sand and gravel have been removed

Management

Major uses: Pasture, hayland, and forest land

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Map Series

Drainage class: Poorly drained

Permeability: Upper part—rapid; lower part—moderately slow or moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 2 percent

Taxonomic classification: Sandy-skeletal over loamy, mixed, superactive, frigid Typic Calciaquolls

Typical Pedon

Mavie fine sandy loam, 2,500 feet south and 250 feet east of the northwest corner of sec. 29, T. 161 N., R. 42 W.

Ap—0 to 12 inches; black (10YR 2/1) fine sandy loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure; friable; many fine roots; strongly effervescent; 1 percent gravel; slightly alkaline; clear smooth boundary.

Bkg—12 to 18 inches; grayish brown (2.5Y 5/2) fine sandy loam; few fine distinct light olive brown (2.5Y 5/4) iron concentrations; weak fine subangular blocky structure; friable; many fine roots; violently effervescent; 1 percent gravel; moderately alkaline; clear wavy boundary.

2Cg1—18 to 29 inches; light brownish gray (2.5Y 6/2) very gravelly sand; few fine distinct light olive brown (2.5Y 5/4) iron concentrations; single grain; loose; slightly effervescent; 55 percent gravel; slightly alkaline; gradual wavy boundary.

2Cg2—29 to 39 inches; light brownish gray (2.5Y 6/2) very gravelly sand; few fine prominent dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; slightly effervescent; 45 percent gravel; slightly alkaline; clear wavy boundary.

3Cg3—39 to 80 inches; light brownish gray (2.5Y 6/2) loam; many medium distinct light olive brown (2.5Y 5/6) and many fine prominent olive yellow (2.5Y 6/8) iron concentrations; massive; strongly effervescent; 5 percent gravel; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 12 inches

Ap horizon:

Hue—10YR, 2.5Y, or N

Value—2

Chroma—0 or 1

Texture—fine sandy loam

Content of rock fragments—0 to 10 percent

Bkg horizon:

Hue—2.5Y

Value—4 or 5

Chroma—1 or 2

Texture—sandy loam, fine sandy loam, or loam

Content of rock fragments—0 to 10 percent

2Cg horizon:

Hue—2.5Y

Value—4 to 6

Chroma—2

Texture—sand, coarse sand, or loamy sand

Content of rock fragments—15 to 55 percent

3Cg horizon:

Hue—2.5Y

Value—6

Chroma—2

Texture—loam or silt loam

Content of rock fragments—0 to 10 percent

412—Mavie fine sandy loam, 0 to 2 percent slopes

Component Descriptions

Mavie and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 7.3 inches

Content of organic matter in the upper 10 inches: 4.5 percent

Foxhome and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):
2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7
feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3
inches

Content of organic matter in the upper 10 inches: 5.0
percent

Northwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60
inches)

Drainage class: Very poorly drained

Parent material: Organic materials over
glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At
the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5
feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July,
August, September)

Ponding is deepest (depth, months): 0.5 foot (January,
February, March, April, May, June, October,
November, December)

Available water capacity to a depth of 60 inches: 11.8
inches

Content of organic matter in the upper 10 inches: 67.5
percent

Percy, very cobbly, and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales
on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60
inches)

Drainage class: Poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months):
0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8
feet (August)

Ponding does not occur (months): January, February,
March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April,
May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.0
inches

Content of organic matter in the upper 10 inches: 5.4
percent

Management

Major uses: Cropland; pasture and hayland

For general and detailed information about
managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Meehan Series

Drainage class: Somewhat poorly drained

Permeability: Rapid

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Mixed, frigid Aquic
Udipsamments

Typical Pedon

Meehan loamy sand, 600 feet north and 1,400 feet
east of the southwest corner of sec. 28, T. 161 N., R.
35 W.

A—0 to 3 inches; very dark gray (10YR 3/1) loamy
sand, dark gray (10YR 4/1) dry; weak fine
subangular blocky structure; very friable; common
fine and very fine roots; very strongly acid; clear
wavy boundary.

E—3 to 8 inches; dark grayish brown (10YR 4/2) sand;
weak fine subangular blocky structure; very friable;
common fine, very fine, and medium roots;
moderately acid; clear wavy boundary.

Bw1—8 to 12 inches; brown (10YR 5/3) sand; few fine
distinct dark yellowish brown (10YR 4/4) iron
concentrations; weak fine subangular blocky
structure; very friable; common fine and medium
roots; slightly acid; clear wavy boundary.

Bw2—12 to 31 inches; yellowish brown (10YR 5/4)
sand; common medium prominent dark yellowish
brown (10YR 4/6) iron concentrations and few fine
distinct grayish brown (10YR 5/2) iron depletions;
weak medium subangular blocky structure; very
friable; few fine, medium, and coarse roots; 1
percent gravel; slightly acid; gradual wavy
boundary.

C1—31 to 35 inches; brown (10YR 5/3) sand; few fine
faint grayish brown (2.5Y 5/2) iron depletions and

common medium prominent strong brown (7.5YR 4/6) iron concentrations; single grain; loose; 1 percent gravel; slightly acid; gradual wavy boundary.

C2—35 to 48 inches; brown (10YR 5/3) sand; few fine faint grayish brown (2.5Y 5/2) iron depletions and common medium prominent strong brown (7.5YR 4/6) iron concentrations; single grain; loose; 1 percent gravel; slightly acid; gradual wavy boundary.

Cg1—48 to 74 inches; grayish brown (10YR 5/2) sand; few fine prominent dark brown (7.5YR 3/4) and common medium prominent strong brown (7.5YR 4/6) iron concentrations; single grain; loose; 2 percent gravel; neutral; clear wavy boundary.

Cg2—74 to 80 inches; brown (10YR 5/3) sand; common fine distinct grayish brown (2.5Y 5/2) iron depletions and common medium prominent strong brown (7.5YR 4/6) iron concentrations; single grain; loose; slightly effervescent; neutral.

Range in Characteristics

Depth to carbonates: More than 40 inches

A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loamy sand

Content of rock fragments—0 to 2 percent

E horizon:

Hue—10YR

Value—4 to 6

Chroma—2

Texture—sand or loamy sand

Content of rock fragments—0 to 2 percent

Bw horizon:

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—3 to 6

Texture—sand or coarse sand

Content of rock fragments—0 to 5 percent

C horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—3 or 4

Texture—sand or coarse sand

Content of rock fragments—0 to 10 percent

Cg horizon:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—2

Texture—sand or coarse sand

Content of rock fragments—0 to 10 percent

202—Meehan loamy sand, MAP 22-30, 0 to 2 percent slopes

Component Descriptions

Meehan and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.4 inches

Content of organic matter in the upper 10 inches: 1.4 percent

Cormant and similar soils

Extent: 8 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

Wurtsmith and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.6 inches

Content of organic matter in the upper 10 inches: 0.8 percent

Leafriver and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.4 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section

- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Mooselake Series

Drainage class: Very poorly drained

Permeability: Moderately rapid

Landform: Lake plains

Parent material: Organic materials

Slope range: 0 to 1 percent

Taxonomic classification: Euic, frigid Typic Haplohemists

Typical Pedon

Mooselake mucky peat, 700 feet north and 1,200 feet east of the southwest corner of sec. 35, T. 164 N., R. 40 W.

Oe1—0 to 16 inches; mucky peat, dark reddish brown (5YR 2.5/2) broken face and pressed, black (5YR 2.5/1) rubbed; about 67 percent fiber, 17 percent rubbed; weak medium subangular blocky structure parting to weak fine subangular blocky; very friable; common very fine roots; 2 percent wood fragments; neutral; clear smooth boundary.

Oe2—16 to 31 inches; mucky peat, dark reddish brown (5YR 2.5/2) broken face, dark reddish brown (5YR 3/2) pressed and rubbed; about 55 percent fiber, 27 percent rubbed; weak medium subangular blocky structure parting to weak fine subangular blocky; very friable; 3 percent wood fragments; neutral; clear smooth boundary.

Oe3—31 to 46 inches; mucky peat, dark reddish brown (5YR 2.5/2) broken face, pressed, and rubbed; about 55 percent fiber, 33 percent rubbed; weak medium subangular blocky structure parting to weak fine subangular blocky; very friable; 3 percent wood fragments; neutral; clear smooth boundary.

Oe4—46 to 80 inches; mucky peat, dark reddish brown (5YR 2.5/2) broken face and rubbed, black (5YR 2.5/1) pressed; about 45 percent fiber, 23 percent rubbed; weak fine subangular blocky structure; very friable; 7 percent wood fragments; neutral.

Range in Characteristics

Thickness of the organic material: More than 51 inches

Oe horizon:

Hue—7.5YR or 5YR

Value—2 or 3

Chroma—1 to 3

Texture—mucky peat
Content of wood fragments—1 to 10 percent

534—Mooselake mucky peat, 0 to 1 percent slopes

Component Descriptions

Mooselake and similar soils

Extent: 90 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Mucky peat
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)
Ponding is shallowest (depth, months): 0.2 foot (July, August, September)
Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)
Available water capacity to a depth of 60 inches: 26.9 inches
Content of organic matter in the upper 10 inches: 62.0 percent

Bullwinkle and similar soils

Extent: 0 to 10 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials over glaciolacustrine deposits or till
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February)
Ponding is shallowest (depth, months): 0.2 foot (July, August, September)
Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 22.7 inches

Content of organic matter in the upper 10 inches: 72.5 percent

Dora and similar soils

Extent: 0 to 10 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials over glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February)
Ponding is shallowest (depth, months): 0.2 foot (July, August, September)
Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)
Available water capacity to a depth of 60 inches: 16.8 inches
Content of organic matter in the upper 10 inches: 55.5 percent

Tawas and similar soils

Extent: 0 to 10 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials over glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February)
Ponding is shallowest (depth, months): 0.2 foot (July, August, September)
Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)
Available water capacity to a depth of 60 inches: 13.2 inches

Content of organic matter in the upper 10 inches: 50.0 percent

Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Moranville Series

Drainage class: Moderately well drained

Permeability: Upper part—rapid; lower part—moderately slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 4 percent

Taxonomic classification: Fine-silty, mixed, superactive, frigid Oxyaquic Hapludalfs

Typical Pedon

Moranville loamy fine sand, 1,700 feet north and 800 feet east of the southwest corner of sec. 12, T. 161 N., R. 37 W.

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) loamy fine sand, grayish brown (10YR 5/2) dry; weak fine and medium granular structure; very friable; common very fine, fine, and medium roots; neutral; abrupt smooth boundary.

E—8 to 24 inches; grayish brown (10YR 5/2) fine sand; weak thick platy structure; very friable; common very fine and fine roots; few fine distinct brown (10YR 4/3) organic coats on faces of peds; neutral; clear smooth boundary.

2Bt1—24 to 28 inches; dark yellowish brown (10YR 4/4) silty clay loam; few fine distinct dark yellowish brown (10YR 4/6) iron concentrations; moderate medium subangular blocky structure; friable; common very fine and fine roots; common distinct discontinuous brown (10YR 4/3) clay films and few distinct discontinuous grayish brown (10YR 5/2) sand coats on faces of peds; slightly alkaline; clear wavy boundary.

2Bt2—28 to 42 inches; brown (10YR 4/3) silty clay loam; common medium distinct dark yellowish brown (10YR 4/6) iron concentrations; weak medium and coarse subangular blocky structure; friable; few fine and very fine roots; common faint

discontinuous dark grayish brown (10YR 4/2) and brown (10YR 4/3) clay films on faces of peds; slightly alkaline; clear smooth boundary.

2C1—42 to 62 inches; light olive brown (2.5Y 5/3 and 5/4), stratified very fine sandy loam and silt loam; few fine distinct light olive brown (2.5Y 5/6) iron concentrations; weak thick platy soil fragments; very friable; slightly effervescent; slightly alkaline; gradual wavy boundary.

2C2—62 to 72 inches; light yellowish brown (2.5Y 6/3) and light olive brown (2.5Y 5/4), stratified very fine sandy loam and silt loam; few fine faint light brownish gray (2.5Y 6/2) iron depletions and few fine prominent dark yellowish brown (10YR 4/6) iron concentrations; moderate thin and medium platy soil fragments; very friable; few fine white (N 8/0) soft masses of lime between peds; strongly effervescent; slightly alkaline; gradual wavy boundary.

2C3—72 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; common medium distinct light yellowish brown (2.5Y 6/4) and common medium prominent dark yellowish brown (10YR 4/6) iron concentrations; massive; very friable; few medium white (N 8/0) soft masses of lime between peds; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 30 to 51 inches

Thickness of the sand cap: 20 to 40 inches

A or Ap horizon:

Hue—10YR

Value—2 to 4

Chroma—1 or 2

Texture—loamy fine sand

E horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 4

Texture—fine sand or loamy fine sand

2Bt horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—3 or 4

Texture—silty clay loam or silty clay

2C horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 4

Texture—very fine sandy loam, silt loam, silty clay loam, or stratified with these textures; thin strata of clay in some pedons

Content of rock fragments—0 to 2 percent

1179B—Moranville loamy fine sand, 0 to 4 percent slopes

Component Descriptions

Moranville and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 4 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 7.7 inches

Content of organic matter in the upper 10 inches: 1.1 percent

Baudette and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 11.9 inches

Content of organic matter in the upper 10 inches: 2.1 percent

Hiwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.7 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Spooner and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 2.1 percent

Management

Major uses: Hayland, cropland, and forest land

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Mustinka Series

Drainage class: Poorly drained

Permeability: Slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 1 percent

Taxonomic classification: Fine, smectitic, frigid Typic Argiaquolls

Typical Pedon

Mustinka clay loam, 200 feet north and 150 feet east of the southwest corner of sec. 25, T. 162 N., R. 39 W.

Ap—0 to 9 inches; black (N 2/0) clay loam, very dark gray (N 3/0) dry; weak fine granular structure; friable; common very fine roots; slightly alkaline; abrupt wavy boundary.

Btg—9 to 18 inches; black (5Y 2.5/1) clay; few fine faint very dark grayish brown (2.5Y 3/2) iron depletions; weak medium prismatic structure parting to weak fine subangular blocky; firm; common very fine roots; few distinct discontinuous black (N 2/0) clay films on faces of peds and in pores and very few distinct discontinuous dark yellowish brown (10YR 3/6) organic coats in root channels and pores; slightly alkaline; clear wavy boundary.

Btkg—18 to 35 inches; dark gray (5Y 4/1) silty clay; few fine faint olive gray (5Y 4/2) iron depletions; weak medium subangular blocky structure parting to weak fine subangular blocky; firm; few very fine roots; few distinct discontinuous very dark gray (N 3/0) clay films on faces of peds and in pores; common fine faint grayish brown (2.5Y 5/2) soft masses of lime throughout; strongly effervescent; slightly alkaline; clear wavy boundary.

Cg1—35 to 51 inches; dark grayish brown (2.5Y 4/2) and light brownish gray (2.5Y 6/2), stratified clay and silt loam; few fine distinct olive brown (2.5Y 4/3) iron concentrations; weak thin platy soil fragments; firm; few fine distinct light gray (2.5Y 7/2) soft masses of lime throughout; slightly effervescent; moderately alkaline; gradual wavy boundary.

Cg2—51 to 62 inches; dark gray (5Y 4/1) clay stratified with bands of light brownish gray (2.5Y 6/2) silt loam $\frac{1}{16}$ to $\frac{1}{8}$ inch thick; common medium prominent dark yellowish brown (10YR 3/6) iron concentrations; massive; firm; common fine prominent light gray (2.5Y 7/2) soft masses of lime throughout; slightly effervescent; moderately alkaline; clear wavy boundary.

2Cg3—62 to 80 inches; light brownish gray (2.5Y 6/2) silty clay loam; common medium prominent dark yellowish brown (10YR 4/4) and common fine distinct very pale brown (10YR 7/4) iron concentrations; massive; friable; strongly effervescent; 2 percent gravel and 1 percent cobbles; moderately alkaline.

Range in Characteristics

Depth to carbonates: 18 to 33 inches

A horizon:

Hue—10YR or N

Value—2 or 3

Chroma—0 or 1

Texture—clay loam

Btg horizon:

Hue—5Y or N

Value—3 or 4

Chroma—0 to 2

Texture—clay or silty clay

Btkg horizon:

Hue—2.5Y or 5Y

Value—3 or 4

Chroma—2

Texture—clay or silty clay

Cg horizon:

Hue—2.5Y or 5Y

Value—4 or 5

Chroma—1 or 2

Texture—clay, silty clay, silty clay loam, silt loam, or stratified with these textures

2Cg horizon:

Hue—2.5Y

Value—5 or 6

Chroma—2 or 3

Texture—clay loam, silty clay loam, or loam

Content of rock fragments—2 to 10 percent

1214—Mustinka clay loam, 0 to 1 percent slopes

Component Descriptions

Mustinka and similar soils

Extent: 90 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 10.3 inches

Content of organic matter in the upper 10 inches: 7.1 percent

Espelie and similar soils

Extent: 4 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 7.7 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Wildwood and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 62.0 percent

Dalbo and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.7 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Management

Major use: Cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Nereson Series

Drainage class: Moderately well drained

Permeability: Moderate or moderately rapid

Landform: Lake plains

Parent material: Till

Slope range: 0 to 3 percent

Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Aquic Argiudolls

Typical Pedon

Nereson fine sandy loam, 2,600 feet south and 1,800 feet west of the northeast corner of sec. 9, T. 161 N., R. 40 W.

Ap—0 to 7 inches; black (10YR 2/1) fine sandy loam, dark gray (10YR 4/1) dry; weak fine subangular

blocky structure; friable; few very fine roots; 2 percent gravel; slightly alkaline; clear wavy boundary.

Bt—7 to 11 inches; brown (10YR 4/3) sandy loam; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; few very fine roots; very few faint discontinuous dark grayish brown (10YR 4/2) clay films on faces of peds; 3 percent gravel; slightly alkaline; abrupt wavy boundary.

2Bk1—11 to 18 inches; pale brown (10YR 6/3) loam; few fine faint yellowish brown (10YR 5/6) iron concentrations; weak fine subangular blocky structure; friable; few very fine roots; very few distinct discontinuous light gray (10YR 7/2) carbonate coats on the lower surface of rock fragments; strongly effervescent; 4 percent gravel; moderately alkaline; clear wavy boundary.

2Bk2—18 to 29 inches; pale brown (10YR 6/3) loam; common medium faint yellowish brown (10YR 5/6) iron concentrations; weak fine subangular blocky structure; friable; few very fine roots; very few distinct discontinuous light gray (10YR 7/2) carbonate coats on the lower surface of rock fragments; strongly effervescent; 7 percent gravel; moderately alkaline; clear wavy boundary.

2C1—29 to 63 inches; pale brown (10YR 6/3) fine sandy loam; many medium distinct light brownish gray (10YR 6/2) iron depletions and few fine distinct yellowish brown (10YR 5/6) iron concentrations; weak fine prismatic soil fragments parting to weak thin platy parting to weak fine subangular blocky; friable; very few distinct discontinuous light gray (10YR 7/2) carbonate coats on the lower surface of rock fragments; strongly effervescent; 5 percent gravel; moderately alkaline; clear wavy boundary.

2C2—63 to 80 inches; light brownish gray (10YR 6/2) loam; many medium distinct light yellowish brown (10YR 6/4), common fine distinct light yellowish brown (10YR 6/4), and few fine distinct yellowish brown (10YR 5/6) iron concentrations; weak medium subangular blocky soil fragments parting to weak thin platy; friable; strongly effervescent; 5 percent gravel; moderately alkaline.

Range in Characteristics

Depth to carbonates: 10 to 15 inches

Thickness of the mollic epipedon: 7 to 10 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1

Texture—fine sandy loam

Content of rock fragments—0 to 2 percent

Bt horizon:

Hue—10YR or 2.5Y

Value—3 to 5

Chroma—2 or 3

Texture—sandy loam

Content of rock fragments—2 to 10 percent

2Bk horizon:

Hue—10YR or 2.5Y

Value—6

Chroma—2 or 3

Texture—loam

Content of rock fragments—2 to 10 percent

2C horizon:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—2

Texture—loam or fine sandy loam

Content of rock fragments—2 to 10 percent

583—Nereson fine sandy loam, 0 to 3 percent slopes

Component Descriptions

Nereson and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 10.2 inches

Content of organic matter in the upper 10 inches: 3.8 percent

Percy and similar soils

Extent: 10 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 3.8 feet (August)
Ponding does not occur (months): January, February, March, July, August, December
Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)
Available water capacity to a depth of 60 inches: 10.1 inches
Content of organic matter in the upper 10 inches: 6.5 percent

Pelan and similar soils

Extent: 3 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 7.1 inches
Content of organic matter in the upper 10 inches: 1.4 percent

Foxhome and similar soils

Extent: 2 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None
Available water capacity to a depth of 60 inches: 8.3 inches
Content of organic matter in the upper 10 inches: 5.0 percent

Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1414—Nereson fine sandy loam, 0 to 3 percent slopes, very cobbly

Component Descriptions

Nereson, very cobbly, and similar soils

Extent: 85 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 10.2 inches
Content of organic matter in the upper 10 inches: 3.8 percent

Percy, very cobbly, and similar soils

Extent: 10 percent of the unit
Geomorphic description: Swales on lake plains; flats on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Till
Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.0 inches

Content of organic matter in the upper 10 inches: 5.4 percent

Pelan and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 7.1 inches

Content of organic matter in the upper 10 inches: 1.4 percent

Foxhome and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3 inches

Content of organic matter in the upper 10 inches: 5.0 percent

Management

Major uses: Cropland; hayland and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Northwood Series

Drainage class: Very poorly drained

Permeability: Upper part—moderately rapid; middle part—rapid; lower part—moderate

Landform: Lake plains

Parent material: Organic materials over glaciolacustrine deposits or till

Slope range: 0 to 1 percent

Taxonomic classification: Sandy over loamy, mixed, superactive, nonacid, frigid Histic Humaquepts

Typical Pedon

Northwood muck, 125 feet north and 2,100 feet east of the southwest corner of sec. 23, T. 161 N., R. 42 W.

Oa—0 to 11 inches; muck, very dark brown (10YR 2/2) broken face and rubbed; about 15 percent fiber, 8 percent rubbed; weak thin platy structure; very friable; many fine roots; neutral; clear smooth boundary.

A—11 to 16 inches; black (10YR 2/1) mucky fine sandy loam; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; common fine roots; neutral; clear smooth boundary.

Bg—16 to 25 inches; light brownish gray (2.5Y 6/2) fine sand; common medium distinct light olive brown (2.5Y 5/6) and few medium prominent olive yellow (2.5Y 6/8) iron concentrations; single grain; loose; few fine roots; slightly alkaline; clear wavy boundary.

2Cg1—25 to 63 inches; light brownish gray (2.5Y 6/2) loam; common medium distinct light olive brown (2.5Y 5/6), few medium prominent olive yellow (2.5Y 6/8), and few fine prominent brown (7.5YR 4/4) iron concentrations; massive; friable; few fine roots; strongly effervescent; 3 percent gravel; slightly alkaline; clear wavy boundary.

2Cg2—63 to 68 inches; light olive gray (5Y 6/2) loam and silt loam stratified with bands of olive gray (5Y

4/2) clay $\frac{1}{16}$ to $\frac{1}{8}$ inch thick; common medium prominent yellowish brown (10YR 5/6) and few fine faint olive (5Y 5/3) iron concentrations; massive; friable; few fine roots; strongly effervescent; 2 percent gravel; slightly alkaline; clear wavy boundary.

2Cg3—68 to 80 inches; olive gray (5Y 5/2 and 4/2) loam and silt loam stratified with bands of olive gray (5Y 4/2) clay $\frac{1}{4}$ to $\frac{1}{2}$ inch thick; common medium distinct olive (5Y 5/6) and few medium distinct olive (5Y 5/4) iron concentrations; massive; firm; few fine distinct white (5Y 8/1) soft masses of lime on faces of peds; strongly effervescent; 2 percent gravel; slightly alkaline.

Range in Characteristics

Depth to carbonates: 20 to 34 inches

Thickness of the organic material: 8 to 11 inches

Other features: Some pedons have a Cg horizon. This horizon has colors and textures similar to those of the Bg horizon.

Oa horizon:

Hue—10YR

Value—2

Chroma—1 or 2

Texture—muck

Content of wood fragments—0 to 15 percent

A horizon:

Hue—10YR or 5Y

Value—2 or 3

Chroma—1

Texture—loamy fine sand, fine sandy loam, loamy sand, or the mucky analogs of these textures

Bg horizon:

Hue—2.5Y or 5Y

Value—4 or 5

Chroma—2

Texture—loamy fine sand, fine sand, or sand

2Cg horizon:

Hue—2.5Y or 5Y

Value—4 to 6

Chroma—2

Texture—loam, silt loam, or loam and silt loam stratified with clay

Content of rock fragments—2 to 5 percent

563—Northwood muck, 0 to 1 percent slopes

Component Descriptions

Northwood and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 67.5 percent

Grygla and similar soils

Extent: 4 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Berner and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 14.4 inches

Content of organic matter in the upper 10 inches: 87.5 percent

Strandquist and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 3.6 percent

Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1328—Northwood muck, wooded, 0 to 1 percent slopes

Component Descriptions

Northwood, wooded, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.9 inches

Content of organic matter in the upper 10 inches: 67.5 percent

Berner, wooded, and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.2 foot (July, August, September)

Ponding is deepest (depth, months): 0.3 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.2 inches

Content of organic matter in the upper 10 inches: 87.5 percent

Grygla and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.7 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Pelan Series

Drainage class: Moderately well drained

Permeability: Upper part—rapid; lower part—moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 3 percent

Taxonomic classification: Loamy-skeletal, mixed, superactive, frigid Oxyaquic Argiudolls

Typical Pedon

Pelan sandy loam, 1,450 feet south and 1,500 feet east of the northwest corner of sec. 32, T. 157 N., R. 43 W., in Marshall County, Minnesota:

Ap—0 to 6 inches; black (10YR 2/1) sandy loam, very dark gray (10YR 3/1) dry; weak very fine subangular blocky structure; very friable; few fine roots; 5 percent gravel; slightly acid; abrupt smooth boundary.

Bt1—6 to 9 inches; brown (10YR 4/3) gravelly coarse sandy loam; moderate medium subangular blocky structure; friable; few fine roots; many very dark grayish brown (10YR 3/2) clay films on faces of peds and bridging sand grains; few fine masses of carbonates; 15 percent gravel; neutral; clear wavy boundary.

Bt2—9 to 12 inches; very dark grayish brown (10YR 3/2) very gravelly sandy loam; weak fine subangular blocky structure; very friable; many dark brown (10YR 3/3) continuous clay films on faces of peds and bridging sand grains; few fine masses of carbonates; 50 percent gravel; slightly alkaline; clear wavy boundary.

Bw1—12 to 16 inches; dark grayish brown (10YR 4/2) very gravelly coarse sand; single grain; loose; 40 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.

Bw2—16 to 24 inches; light brownish gray (2.5Y 6/2) very gravelly coarse sand; few medium distinct light yellowish brown (2.5Y 6/4) iron concentrations; single grain; loose; 40 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.

2Bk—24 to 60 inches; light brownish gray (2.5Y 6/2) loam; common fine prominent light olive brown (2.5Y 5/6) and few medium prominent dark yellowish brown (10YR 4/6) iron concentrations; weak fine and medium subangular blocky structure; friable; common fine soft masses of carbonates; 5 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: 8 to 24 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2
 Texture—fine sandy loam
 Content of rock fragments—0 to 25 percent

Bt horizon:

Hue—10YR
 Value—3 or 4
 Chroma—2 to 4
 Texture—sandy loam, coarse sandy loam, or sandy clay loam
 Content of rock fragments—35 to 65 percent

Bw horizon:

Hue—10YR or 2.5Y
 Value—5 or 6
 Chroma—2 to 4
 Texture—coarse sand, sand, fine sand, loamy coarse sand, loamy sand, or loamy fine sand
 Content of rock fragments—35 to 65 percent

2Bk horizon:

Hue—10YR or 2.5Y
 Value—5 or 6
 Chroma—2 to 4
 Texture—fine sandy loam, sandy loam, or loam
 Content of rock fragments—5 to 15 percent

280—Pelan sandy loam, 0 to 3 percent slopes

Component Descriptions

Pelan and similar soils

Extent: 85 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 7.1 inches
Content of organic matter in the upper 10 inches: 1.4 percent

Strandquist and similar soils

Extent: 10 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 3.6 percent

Garnes and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 10.2 inches

Content of organic matter in the upper 10 inches: 1.2 percent

Marquette and similar soils

Extent: 1 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits

Slope range: 1 to 8 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 3.3 inches

Content of organic matter in the upper 10 inches: 1.6 percent

Pits, gravel

Extent: 1 percent of the unit

Slope range: 1 to 50 percent

Definition: Areas from which sand and gravel have been removed

Management

Major uses: Pasture, hayland, and forest land

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Percy Series

Drainage class: Very poorly drained and poorly drained

Permeability: Moderate

Landform: Lake plains

Parent material: Till

Slope range: 0 to 2 percent

Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Typic Calciaquolls

Typical Pedon

Percy loam (fig. 9), 200 feet south and 2,500 feet east of the northwest corner of sec. 2, T. 162 N., R. 41 W.

Ap—0 to 10 inches; black (10YR 2/1) loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure parting to weak very fine subangular blocky; friable; many very fine and fine roots; slightly effervescent; slightly alkaline; clear smooth boundary.

Bkg1—10 to 12 inches; grayish brown (2.5Y 5/2) loam; common fine faint light yellowish brown (2.5Y 6/3) iron concentrations; weak fine subangular blocky structure; friable; common very fine roots; few distinct discontinuous dark gray (10YR 4/1) organic coats on faces of peds; common fine

distinct white (2.5Y 8/1) soft masses of lime between peds; violently effervescent; 2 percent gravel and 2 percent cobbles; slightly alkaline; clear smooth boundary.

Bkg2—12 to 18 inches; grayish brown (2.5Y 5/2) loam; common fine faint light yellowish brown (2.5Y 6/3) iron concentrations; weak fine subangular blocky structure; friable; common very fine roots; common fine distinct white (2.5Y 8/1) soft masses of lime between peds; violently effervescent; 2 percent gravel and 2 percent cobbles; slightly alkaline; clear wavy boundary.

Bkg3—18 to 25 inches; light brownish gray (2.5Y 6/2) loam; many fine and medium faint light yellowish brown (2.5Y 6/3) and common fine distinct light olive brown (2.5Y 5/6) iron concentrations; weak fine subangular blocky structure; friable; common very fine roots; common fine and medium distinct pale yellow (2.5Y 8/2) soft masses of lime between peds; strongly effervescent; 5 percent gravel and 2 percent cobbles; slightly alkaline; gradual wavy boundary.

Cg1—25 to 74 inches; light brownish gray (2.5Y 6/2) loam; many medium and coarse faint light yellowish brown (2.5Y 6/3) iron concentrations; massive; friable; common medium distinct pale yellow (2.5Y 8/2) soft masses of lime between peds; strongly effervescent; 5 percent gravel and 2 percent cobbles; slightly alkaline; gradual wavy boundary.

Cg2—74 to 80 inches; light brownish gray (2.5Y 6/2) loam; common fine and medium distinct light olive brown (2.5Y 5/6) and common fine prominent yellowish brown (10YR 5/6) iron concentrations; massive; friable; strongly effervescent; 5 percent gravel and 2 percent cobbles; slightly alkaline.

Range in Characteristics

Depth to carbonates: 0 to 9 inches

Thickness of the mollic epipedon: 7 to 14 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1

Texture—loam, mucky loam, or fine sandy loam

Content of rock fragments—0 to 10 percent

Bkg horizon:

Hue—5Y, 2.5Y, or 10YR

Value—4 to 6

Chroma—1 or 2

Texture—fine sandy loam, loam, or sandy loam

Content of rock fragments—5 to 15 percent

Cg horizon:

Hue—5Y, 2.5Y, or 10YR

Value—4 to 7

Chroma—1 or 2

Texture—fine sandy loam, loam, or sandy loam

Content of rock fragments—5 to 20 percent

379—Percy loam, 0 to 2 percent slopes, very cobbly***Component Descriptions*****Percy, very cobbly, and similar soils***Extent:* 90 percent of the unit*Geomorphic description:* Swales on lake plains; flats on lake plains*Slope range:* 0 to 2 percent*Texture of the surface layer:* Loam*Depth to restrictive feature:* Very deep (more than 60 inches)*Drainage class:* Poorly drained*Parent material:* Till*Flooding:* None*Wet soil moisture status is highest (depth, months):* 0.5 foot (April)*Wet soil moisture status is lowest (depth, months):* 3.8 feet (August)*Ponding does not occur (months):* January, February, March, July, August, December*Ponding is deepest (depth, months):* 0.3 foot (April, May, June, September, October, November)*Available water capacity to a depth of 60 inches:* 10.0 inches*Content of organic matter in the upper 10 inches:* 5.4 percent**Boash and similar soils***Extent:* 3 percent of the unit*Geomorphic description:* Swales on lake plains; flats on lake plains*Slope range:* 0 to 2 percent*Texture of the surface layer:* Clay loam*Depth to restrictive feature:* Very deep (more than 60 inches)*Drainage class:* Poorly drained*Parent material:* Glaciolacustrine deposits over till*Flooding:* None*Wet soil moisture status is highest (depth, months):* At the surface (April)*Wet soil moisture status is lowest (depth, months):* 3.0 feet (August)*Ponding does not occur (months):* January, February, March, December*Ponding is deepest (depth, months):* 0.3 foot (April, May, June, November)*Available water capacity to a depth of 60 inches:* 9.6 inches*Content of organic matter in the upper 10 inches:* 4.3 percent**Strandquist and similar soils***Extent:* 3 percent of the unit*Geomorphic description:* Flats on lake plains; swales on lake plains*Slope range:* 0 to 2 percent*Texture of the surface layer:* Loam*Depth to restrictive feature:* Very deep (more than 60 inches)*Drainage class:* Poorly drained*Parent material:* Glaciolacustrine deposits over till*Flooding:* None*Wet soil moisture status is highest (depth, months):* 0.5 foot (April)*Wet soil moisture status is lowest (depth, months):* 4.1 feet (August)*Ponding does not occur (months):* January, February, March, July, August, September, November, December*Ponding is deepest (depth, months):* 0.3 foot (April, May, June, October)*Available water capacity to a depth of 60 inches:* 6.3 inches*Content of organic matter in the upper 10 inches:* 3.6 percent**Haug and similar soils***Extent:* 2 percent of the unit*Geomorphic description:* Depressions on lake plains*Slope range:* 0 to 1 percent*Texture of the surface layer:* Muck*Depth to restrictive feature:* Very deep (more than 60 inches)*Drainage class:* Very poorly drained*Parent material:* Organic materials over till*Flooding:* None*Wet soil moisture status is highest (depth, months):* At the surface (March, April, May)*Wet soil moisture status is lowest (depth, months):* 2.5 feet (February)*Ponding is shallowest (depth, months):* 0.3 foot (July, August, September)*Ponding is deepest (depth, months):* 0.5 foot (January, February, March, April, May, June, October, November, December)*Available water capacity to a depth of 60 inches:* 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Skagen, very cobbly, and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.2 inches

Content of organic matter in the upper 10 inches: 6.5 percent

Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

383—Percy loam, 0 to 2 percent slopes

Component Descriptions

Percy and similar soils

Extent: 90 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.5 percent

Boash and similar soils

Extent: 3 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.6 inches

Content of organic matter in the upper 10 inches: 4.3 percent

Strandquist and similar soils

Extent: 3 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 3.6 percent

Haug and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Skagen and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.2 inches

Content of organic matter in the upper 10 inches: 6.1 percent

Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

384—Percy mucky loam, depressional, 0 to 1 percent slopes

Component Descriptions

Percy, depressional, and similar soils

Extent: 85 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 10.2 inches

Content of organic matter in the upper 10 inches: 6.5 percent

Haug and similar soils

Extent: 7 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Percy and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.5 percent

Boash and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.6 inches

Content of organic matter in the upper 10 inches: 4.3 percent

Management

Major uses: Pasture and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

581—Percy fine sandy loam, 0 to 1 percent slopes

Component Descriptions

Percy and similar soils

Extent: 90 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 9.6 inches

Content of organic matter in the upper 10 inches: 6.5 percent

Haug and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Boash and similar soils

Extent: 3 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.6 inches

Content of organic matter in the upper 10 inches: 4.3 percent

Skagen and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.2 inches

Content of organic matter in the upper 10 inches: 6.1 percent

Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1030—Pits, gravel-Udipsamments complex, 1 to 50 percent slopes

Component Descriptions

Pits, gravel

Extent: 75 percent of the unit

Slope range: 1 to 50 percent

Definition: Areas from which sand and gravel have been removed

Udipsamments and similar soils

Extent: 20 percent of the unit

Slope range: 1 to 50 percent

Texture of the surface layer: Sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Excessively drained

Flooding: None

Ponding: None

Available water capacity to a depth of 60 inches: 4.3 inches

Content of organic matter in the upper 10 inches: 0.2 percent

Corliss and similar soils

Extent: 2 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits, backslopes

Slope range: 1 to 6 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 2.9 inches

Content of organic matter in the upper 10 inches: 1.7 percent

Karlstad and similar soils

Extent: 2 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Backslopes

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 3.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 3.2 inches

Content of organic matter in the upper 10 inches: 2.1 percent

Hangaard and similar soils

Extent: 1 percent of the unit

Geomorphic description: Flats on beach plains; swales on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, October, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 2.9 inches

Content of organic matter in the upper 10 inches: 5.5 percent

Management

Major use: Wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Redby Series

Drainage class: Somewhat poorly drained

Permeability: Rapid

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 3 percent

Taxonomic classification: Mixed, frigid Aquic Udipsamments

Typical Pedon

Redby loamy fine sand (fig. 10), 800 feet south and 2,000 feet east of the northwest corner of sec. 36, T. 159 N., R. 39 W.

A—0 to 3 inches; very dark gray (10YR 3/1) loamy fine sand, gray (10YR 5/1) dry; weak fine subangular blocky structure parting to single grain; very friable; many fine and very fine roots; strongly acid; abrupt wavy boundary.

E—3 to 6 inches; dark grayish brown (10YR 4/2) fine sand; weak fine subangular blocky structure parting to single grain; very friable; many fine and very fine roots; slightly acid; clear wavy boundary.

Bw1—6 to 13 inches; dark yellowish brown (10YR 4/6) fine sand; common fine prominent dark reddish brown (5YR 3/4) iron concentrations; weak fine subangular blocky structure parting to single grain; very friable; common very fine roots; slightly acid; clear wavy boundary.

Bw2—13 to 28 inches; dark yellowish brown (10YR 4/6) fine sand; common fine prominent dark reddish brown (5YR 3/4) iron concentrations and common fine prominent light brownish gray (10YR 6/2) iron depletions; weak fine subangular blocky structure parting to single grain; very friable; slightly acid; clear wavy boundary.

Cg1—28 to 55 inches; light brownish gray (10YR 6/2) fine sand; common fine distinct dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; neutral; gradual wavy boundary.

Cg2—55 to 65 inches; light brownish gray (10YR 6/2) fine sand; few fine distinct dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; neutral; gradual wavy boundary.

Cg3—65 to 80 inches; light brownish gray (10YR 6/2)
fine sand; single grain; loose; neutral.

Range in Characteristics

Depth to carbonates: More than 60 inches

A or Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loamy fine sand

E horizon:

Hue—10YR

Value—4 to 6

Chroma—1 to 3

Texture—fine sand

Bw horizon:

Hue—10YR

Value—4 to 6

Chroma—3 to 6

Texture—fine sand

Cg horizon:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—2 or 3

Texture—fine sand

116—Redby loamy fine sand, 0 to 3 percent slopes

Component Descriptions

Redby and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):
1.5 feet (April)

Wet soil moisture status is lowest (depth, months):
More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Cormant and similar soils

Extent: 8 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):
0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

Hiwood and similar soils

Extent: 6 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):
2.5 feet (April)

Wet soil moisture status is lowest (depth, months):
More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.7 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Leafriver and similar soils

Extent: 1 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.4 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1274B—Redby-Hiwood-Leafriver complex, 0 to 6 percent slopes

Component Descriptions

Redby and similar soils

Extent: 40 percent of the unit

Geomorphic description: Rises on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 5.0 inches

Content of organic matter in the upper 10 inches: 1.2 percent

Hiwood and similar soils

Extent: 30 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 1.0 percent

Leafriver, wooded, and similar soils

Extent: 15 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 7.4 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Clearriver and similar soils

Extent: 5 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, backslopes

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained
Parent material: Beach deposits
Flooding: None
Wet soil moisture status is highest (depth, months):
 3.0 feet (April)
Wet soil moisture status is lowest (depth, months):
 More than 6.7 feet (July, August)
Ponding: None
Available water capacity to a depth of 60 inches: 3.5 inches
Content of organic matter in the upper 10 inches: 0.5 percent

Cormant and similar soils

Extent: 5 percent of the unit
Geomorphic description: Flats on lake plains; swales on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months):
 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 4.9 feet (August)
Ponding does not occur (months): January, February, March, July, August, September, November, December
Ponding is deepest (depth, months): 0.3 foot (April, May)
Available water capacity to a depth of 60 inches: 4.9 inches
Content of organic matter in the upper 10 inches: 3.9 percent

Zimmerman and similar soils

Extent: 5 percent of the unit
Geomorphic description: Beach ridges
Position on the landform: Shoulders, summits
Slope range: 1 to 6 percent
Texture of the surface layer: Fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Beach deposits
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Rifle Series

Drainage class: Very poorly drained
Permeability: Moderately rapid
Landform: Lake plains
Parent material: Organic materials
Slope range: 0 to 1 percent
Taxonomic classification: Euic, frigid Typic Haplohemists

Typical Pedon

Rifle mucky peat, 250 feet north and 2,400 feet west of the southeast corner of sec. 28, T. 163 N., R. 39 W.

- Oep—0 to 8 inches; mucky peat, very dark brown (10YR 2/2) broken face, dark reddish brown (5YR 3/2) pressed and rubbed; about 35 percent fiber, 25 percent rubbed; weak fine granular structure; friable; slightly acid; clear smooth boundary.
- Oe1—8 to 12 inches; mucky peat, brown or dark brown (7.5YR 4/2) broken face, very dark grayish brown (10YR 3/2) pressed and rubbed; about 65 percent fiber, 35 percent rubbed; weak medium granular structure; friable; moderately acid; clear smooth boundary.
- Oe2—12 to 36 inches; mucky peat, dark reddish brown (5YR 2/2) broken face, pressed, and rubbed; about 75 percent fiber, 50 percent rubbed; weak medium granular structure; friable; moderately acid; clear smooth boundary.
- Oe3—36 to 44 inches; mucky peat, dark reddish brown (5YR 3/2) broken face, very dark gray (5YR 3/1) pressed and rubbed; about 50 percent fiber, 20 percent rubbed; weak medium granular structure; friable; moderately acid; clear smooth boundary.
- Oe4—44 to 80 inches; mucky peat, very dark gray (10YR 3/1) broken face, black (5YR 2/1) pressed and rubbed; about 30 percent fiber, 20 percent

rubbed; weak fine granular structure; friable; moderately acid.

Range in Characteristics

Depth to carbonates: More than 51 inches

Thickness of the organic material: More than 51 inches

Oep horizon:

Hue—5YR, 7.5YR, or 10YR

Value—2 or 3

Chroma—1 or 2

Texture—muck

Oe horizon:

Hue—5YR, 7.5YR, or 10YR

Value—2 to 4

Chroma—1 or 2

Texture—mucky peat

541—Rifle mucky peat, MAP 18-22, 0 to 1 percent slopes

Component Descriptions

Rifle and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky peat

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 31.7 inches

Content of organic matter in the upper 10 inches: 82.0 percent

Tacoosh and similar soils

Extent: 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky peat

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 21.6 inches

Content of organic matter in the upper 10 inches: 87.0 percent

Management

Major uses: Wildlife habitat, pasture, and cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Roliss Series

Drainage class: Poorly drained and very poorly drained

Permeability: Moderately slow or moderate

Landform: Lake plains

Parent material: Till

Slope range: 0 to 2 percent

Taxonomic classification: Fine-loamy, mixed, superactive, calcareous, frigid Typic Endoaquolls

Typical Pedon

Roliss loam, 2,350 feet west and 560 feet north of the southeast corner of sec. 15, T. 151 N., R. 39 W., in Polk County, Minnesota:

Ap—0 to 9 inches; black (10YR 2/1) loam, very dark gray (10YR 3/1) dry; few fine distinct dark yellowish brown (10YR 3/4) iron concentrations; weak medium subangular blocky structure parting to weak fine granular; friable; few very fine roots; 5 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.

A—9 to 14 inches; very dark gray (10YR 3/1) clay loam; few fine distinct dark yellowish brown (10YR 3/4) iron concentrations; weak medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; 5 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.

Bg—14 to 20 inches; grayish brown (2.5Y 5/2) clay loam; common fine prominent strong brown (7.5YR 4/6) iron concentrations; weak medium subangular blocky structure; friable; 5 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

Cg1—20 to 45 inches; grayish brown (2.5Y 5/2) loam; common fine prominent dark yellowish brown (10YR 4/6) iron concentrations; massive; friable; few very fine roots; 5 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.

Cg2—45 to 59 inches; grayish brown (2.5Y 5/2) loam; common medium prominent yellowish brown (10YR 5/6) and few fine strong brown (7.5YR 5/6) iron concentrations; massive; firm; few very fine distinct white (10YR 8/1) soft masses of carbonates between peds; few fine roots; 4 percent gravel; strongly effervescent; moderately alkaline; clear wavy boundary.

Cg3—59 to 70 inches; dark grayish brown (2.5Y 4/2) loam; common and many fine and medium prominent yellowish brown (10YR 5/6) and few fine yellowish red (5YR 5/8) iron concentrations; massive; firm; few fine distinct white (10YR 8/1) soft masses of carbonates between peds; few very fine roots; 4 percent gravel; strongly effervescent; moderately alkaline; clear wavy boundary.

Cg4—70 to 80 inches; grayish brown (2.5Y 5/2) loam; many medium prominent yellowish brown (10YR 5/6) and few fine yellowish red (5YR 5/8) iron concentrations; massive; firm; few discontinuous distinct black (N 2/0) manganese stains on faces of peds and in pores; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 12 inches

Ap or A horizon:

Hue—10YR or N

Value—2 or 3

Chroma—0 or 1

Texture—loam

Content of rock fragments—0 to 5 percent

Bg horizon:

Hue—2.5Y or 5Y

Value—4 or 5

Chroma—1 or 2

Texture—loam, clay loam, or silty clay loam

Content of rock fragments—0 to 5 percent

Cg horizon:

Hue—2.5Y or 5Y

Value—4 to 6

Chroma—2 or 3

Texture—loam, clay loam, or silty clay loam

Content of rock fragments—2 to 10 percent

387—Roliss loam, depressional, 0 to 1 percent slopes

Component Descriptions

Roliss, depressional, and similar soils

Extent: 85 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 4.8 percent

Haug and similar soils

Extent: 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Roliss soils that are not in depressions

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.7 inches

Content of organic matter in the upper 10 inches: 5.0 percent

Management

Major uses: Pasture and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

582—Roliss loam, 0 to 2 percent slopes

Component Descriptions

Roliss and similar soils

Extent: 85 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.7 inches

Content of organic matter in the upper 10 inches: 5.0 percent

Roliss, depressional, and similar soils

Extent: 7 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 4.8 percent

Boash and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.6 inches

Content of organic matter in the upper 10 inches: 4.3 percent

Haug and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Rosewood Series

Drainage class: Poorly drained

Permeability: Upper part—moderately rapid; lower part—rapid

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Sandy, mixed, frigid Typic Calciaquolls

Typical Pedon

Rosewood fine sandy loam, 2,600 feet north and 650 feet west of the southeast corner of sec. 29, T. 159 N., R. 39 W.

Ap—0 to 11 inches; black (10YR 2/1) fine sandy loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure; friable; few very fine roots; slightly effervescent; slightly alkaline; abrupt smooth boundary.

Bkg—11 to 19 inches; dark gray (10YR 4/1) fine sandy loam; few fine distinct brown (10YR 4/3) iron concentrations; weak fine subangular blocky structure; friable; violently effervescent; moderately alkaline; abrupt smooth boundary.

Cg1—19 to 41 inches; light brownish gray (2.5Y 6/2) fine sand; many medium prominent dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; slightly effervescent; moderately alkaline; clear wavy boundary.

Cg2—41 to 50 inches; light brownish gray (2.5Y 6/2) fine sand; few fine prominent dark yellowish brown (10YR 4/6) and many medium distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; slightly alkaline; clear wavy boundary.

Cg3—50 to 65 inches; light brownish gray (2.5Y 6/2) fine sand; common medium distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; slightly alkaline; clear wavy boundary.

Cg4—65 to 73 inches; grayish brown (2.5Y 5/2) fine sand; few fine prominent dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; very slightly effervescent; 9 percent gravel; slightly alkaline; clear wavy boundary.

Cg5—73 to 80 inches; grayish brown (2.5Y 5/2) fine sand; few medium prominent dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 12 inches

Ap horizon:

Hue—10YR or N
 Value—2
 Chroma—0 or 1
 Texture—fine sandy loam
 Content of rock fragments—0 to 5 percent

Bkg horizon:

Hue—10YR, 2.5Y, or 5Y
 Value—4 to 6
 Chroma—1 or 2
 Texture—loamy sand, loamy fine sand, fine sand,
 or fine sandy loam
 Content of rock fragments—0 to 5 percent

Cg horizon:

Hue—2.5Y or 5Y
 Value—5 to 7
 Chroma—2
 Texture—fine sand, sand, or coarse sand
 Content of rock fragments—0 to 10 percent

712—Rosewood fine sandy loam, 0 to 2 percent slopes

Component Descriptions

Rosewood and similar soils

Extent: 85 percent of the unit
Geomorphic description: Swales on lake plains; flats on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 4.9 feet (August)
Ponding does not occur (months): January, February, March, July, August, September, November, December
Ponding is deepest (depth, months): 0.3 foot (April, May)
Available water capacity to a depth of 60 inches: 5.7 inches
Content of organic matter in the upper 10 inches: 5.5 percent

Deerwood and similar soils

Extent: 6 percent of the unit
Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.1 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Hangaard and similar soils

Extent: 5 percent of the unit
Geomorphic description: Swales on beach plains; flats on beach plains
Slope range: 0 to 2 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Beach deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 0.3 foot (April)
Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)
Ponding does not occur (months): January, February, March, July, August, September, October, November, December
Ponding is deepest (depth, months): 0.3 foot (April, May)
Available water capacity to a depth of 60 inches: 2.9 inches
Content of organic matter in the upper 10 inches: 5.5 percent

Ulen and similar soils

Extent: 4 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months):
 2.0 feet (April)
Wet soil moisture status is lowest (depth, months):
 More than 6.7 feet (August)
Ponding: None
Available water capacity to a depth of 60 inches: 5.1 inches
Content of organic matter in the upper 10 inches: 3.5 percent

Management

Major uses: Cropland and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1181—Rosewood-Ulen complex, 0 to 2 percent slopes

Component Descriptions

Rosewood and similar soils

Extent: 50 percent of the unit
Geomorphic description: Flats on lake plains; swales on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months):
 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 4.9 feet (August)
Ponding does not occur (months): January, February, March, July, August, September, November, December
Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)
Available water capacity to a depth of 60 inches: 5.3 inches
Content of organic matter in the upper 10 inches: 4.8 percent

Ulen and similar soils

Extent: 40 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months):
 2.0 feet (April)
Wet soil moisture status is lowest (depth, months):
 More than 6.7 feet (August)
Ponding: None
Available water capacity to a depth of 60 inches: 5.2 inches
Content of organic matter in the upper 10 inches: 3.5 percent

Redby and similar soils

Extent: 5 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months):
 1.5 feet (April)
Wet soil moisture status is lowest (depth, months):
 More than 6.7 feet (August)
Ponding: None
Available water capacity to a depth of 60 inches: 4.8 inches
Content of organic matter in the upper 10 inches: 0.6 percent

Deerwood and similar soils

Extent: 3 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials over glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.1 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Syrene and similar soils

Extent: 2 percent of the unit

Geomorphic description: Swales on beach plains; flats on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, October, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.3 inches

Content of organic matter in the upper 10 inches: 5.5 percent

Management

Major uses: Cropland and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section
- "Wildlife Habitat" section
- "Engineering" and "Soil Properties" sections

Rushlake Series

Drainage class: Moderately well drained

Permeability: Rapid

Landform: Beach plains

Parent material: Beach deposits

Slope range: 0 to 3 percent

Taxonomic classification: Mixed, frigid Aquic Udipsamments

Typical Pedon

Rushlake loamy sand, 800 feet north and 2,625 feet west of the southeast corner of sec. 6, T. 159 N., R. 41 W.

Ap—0 to 8 inches; very dark gray (10YR 3/1) loamy sand, dark gray (10YR 4/1) dry; single grain; loose; many fine roots; 3 percent gravel; slightly alkaline; clear smooth boundary.

C1—8 to 16 inches; brown (10YR 5/3) gravelly loamy sand, pale brown (10YR 6/3) dry; few medium distinct light yellowish brown (2.5Y 6/4) iron concentrations; single grain; loose; 10 percent gravel; 20 percent cobbles; slightly effervescent; slightly alkaline; gradual wavy boundary.

C2—16 to 25 inches; grayish brown (2.5Y 5/2) gravelly loamy sand; few medium distinct light yellowish brown (2.5Y 6/4) iron concentrations; single grain; loose; 25 percent gravel; 5 percent cobbles; slightly effervescent; slightly alkaline; gradual wavy boundary.

C3—25 to 40 inches; light brownish gray (2.5Y 6/2) gravelly sand; common medium distinct light yellowish brown (2.5Y 6/4) and few fine distinct olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; 25 percent gravel; 5 percent cobbles; slightly effervescent; slightly alkaline; gradual wavy boundary.

C4—40 to 58 inches; grayish brown (2.5Y 5/2) gravelly sand; common medium distinct light yellowish brown (2.5Y 6/4) and few fine distinct yellowish brown (10YR 5/6) iron concentrations; single grain; loose; 20 percent gravel; 8 percent cobbles; strongly effervescent; slightly alkaline; gradual wavy boundary.

C5—58 to 72 inches; light brownish gray (2.5Y 6/2) sand; many medium distinct olive yellow (2.5Y 6/6) and few fine distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; 1 percent gravel; 3 percent cobbles; slightly effervescent; slightly alkaline; clear wavy boundary.

C6—72 to 80 inches; light brownish gray (2.5Y 6/2) sand; few fine distinct light yellowish brown (2.5Y 6/4) and light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; 1 percent gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: 0 to 20 inches

Ap horizon:

Hue—10YR
 Value—2 or 3
 Chroma—1 to 3
 Texture—loamy sand
 Content of rock fragments—0 to 10 percent

C horizon:

Hue—10YR or 2.5Y
 Value—4 to 6
 Chroma—2 to 4
 Texture—coarse sand, sand, or loamy sand
 Content of rock fragments—5 to 35 percent

708—Rushlake loamy sand, 0 to 3 percent slopes

Component Descriptions

Rushlake and similar soils

Extent: 85 percent of the unit
Geomorphic description: Rises on beach plains
Slope range: 0 to 3 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Beach deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 3.0 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)
Ponding: None
Available water capacity to a depth of 60 inches: 4.0 inches
Content of organic matter in the upper 10 inches: 1.9 percent

Corliss and similar soils

Extent: 6 percent of the unit
Geomorphic description: Beach ridges
Position on the landform: Shoulders, summits, backslopes
Slope range: 1 to 6 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Beach deposits
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 2.9 inches

Content of organic matter in the upper 10 inches: 1.7 percent

Redby and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Hangaard and similar soils

Extent: 3 percent of the unit

Geomorphic description: Flats on beach plains; swales on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, October, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 2.9 inches

Content of organic matter in the upper 10 inches: 5.5 percent

Pits, gravel

Extent: 1 percent of the unit

Slope range: 1 to 50 percent

Definition: Areas from which sand and gravel have been removed

Management

Major uses: Pasture, hayland, and cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Sago Series

Drainage class: Very poorly drained

Permeability: Moderate

Landform: Lake plains

Parent material: Organic materials over glaciolacustrine deposits

Slope range: 0 to 1 percent

Taxonomic classification: Coarse-loamy, mixed, superactive, nonacid, frigid Histic Humaquepts

Typical Pedon

Sago muck, 800 feet north and 1,700 feet west of the southeast corner of sec. 11, T. 163 N., R. 37 W.

Oa—0 to 14 inches; muck, black (10YR 2/1) broken faced and rubbed; about 10 percent fiber, 2 percent rubbed; weak thin platy structure parting to weak fine granular; very friable; common fine and very fine roots; 3 percent wood fragments; slightly acid; abrupt smooth boundary.

A—14 to 17 inches; black (10YR 2/1) fine sandy loam; weak fine subangular blocky structure; friable; few fine and very fine roots; neutral; clear smooth boundary.

Bg—17 to 29 inches; grayish brown (2.5Y 5/2) very fine sandy loam; common fine distinct brownish yellow (10YR 6/8) iron concentrations; weak fine and medium subangular blocky structure; friable; few very fine roots; many distinct discontinuous dark gray (5Y 4/1) organic coats on faces of peds and in pores; neutral; gradual wavy boundary.

Cg1—29 to 49 inches; light brownish gray (2.5Y 6/2) very fine sand; many medium distinct brownish yellow (10YR 6/8) iron concentrations; massive; very friable; slightly effervescent; slightly alkaline; clear wavy boundary.

Cg2—49 to 58 inches; light gray (2.5Y 7/2) silt loam; many coarse distinct light yellowish brown (2.5Y 6/4) and common fine distinct yellowish brown

(10YR 5/6) iron concentrations; massive; friable; slightly effervescent; slightly alkaline; gradual wavy boundary.

Cg3—58 to 80 inches; stratified grayish brown (2.5Y 5/2) very fine sand and light gray (2.5Y 7/2) silt loam; common fine distinct yellowish brown (10YR 5/6) iron concentrations; massive; friable or very friable; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the organic material: 8 to 16 inches

Oa horizon:

Hue—10YR

Value—2

Chroma—1

Texture—muck

A horizon:

Hue—10YR

Value—2

Chroma—1

Texture—fine sandy loam, loam, or silt loam

Bg horizon:

Hue—2.5Y

Value—4 or 5

Chroma—2

Texture—very fine sandy loam or silt loam

Cg horizon:

Hue—2.5Y

Value—5 to 7

Chroma—2

Texture—very fine sandy loam, silt loam, or very fine sand

532—Sago muck, 0 to 1 percent slopes

Component Descriptions

Sago and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.4 inches

Content of organic matter in the upper 10 inches: 72.5 percent

Cathro and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 19.8 inches

Content of organic matter in the upper 10 inches: 72.5 percent

Zippel and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 10.9 inches

Content of organic matter in the upper 10 inches: 4.0 percent

Management

Major uses: Pasture and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Sahkahtay Series

Drainage class: Poorly drained

Permeability: Upper part—moderate; lower part—very rapid

Landform: Beach plains

Parent material: Beach deposits

Slope range: 0 to 2 percent

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, frigid Mollic Endoaqualfs

Typical Pedon

Sahkahtay sandy loam, 100 feet south and 1,200 feet west of the northeast corner of sec. 2, T. 157 N., R. 43 W., in Marshall County, Minnesota:

A—0 to 4 inches; black (10YR 2/1) sandy loam, very dark gray (10YR 3/1) dry; weak medium granular structure; friable; many very fine roots; neutral; abrupt smooth boundary.

Eg—4 to 8 inches; dark grayish brown (10YR 4/2) loamy sand; common fine faint brown (10YR 5/3) iron concentrations; loose; common very fine roots; 5 percent gravel; neutral; clear wavy boundary.

Btg—8 to 14 inches; dark grayish brown (10YR 4/2) sandy clay loam; common fine distinct yellowish brown (10YR 5/6) iron concentrations; moderate fine angular blocky structure; firm; common fine roots; few distinct discontinuous very dark grayish brown (10YR 3/2) clay films on faces of peds and in pores; 5 percent gravel; neutral; gradual smooth boundary.

2Cg1—14 to 18 inches; dark grayish brown (10YR 4/2) loamy coarse sand; common fine faint olive brown (2.5Y 4/4) iron concentrations; weak fine subangular blocky structure; very friable; common

very fine roots; 10 percent gravel; slightly alkaline; gradual smooth boundary.

2Cg2—18 to 30 inches; dark grayish brown (2.5Y 4/2) gravelly coarse sand; common fine distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; slightly effervescent; 30 percent gravel; slightly alkaline; gradual smooth boundary.

2Cg3—30 to 63 inches; grayish brown (10YR 5/2) gravelly coarse sand; common fine distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; strongly effervescent; 30 percent gravel; slightly alkaline; gradual wavy boundary.

2Cg4—63 to 80 inches; grayish brown (2.5Y 5/2) gravelly sand; common fine faint light olive brown (2.5Y 5/3) and common fine distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; strongly effervescent; 20 percent gravel; moderately alkaline.

Range in Characteristics

Depth to carbonates: 14 to 30 inches

Thickness of the ochric epipedon: 4 to 7 inches

A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—sandy loam

Content of rock fragments—0 to 15 percent

Eg horizon:

Hue—10YR

Value—4 to 6

Chroma—2

Texture—loamy sand or sand

Content of rock fragments—2 to 5 percent

Btg horizon:

Hue—10YR or 2.5Y

Value—4

Chroma—2

Texture—sandy loam or sandy clay loam

Content of rock fragments—2 to 5 percent

2Cg horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 or 3

Texture—sand, coarse sand, or loamy coarse sand

Content of rock fragments—average of 10 to 35 percent; less than 10 percent or more than 35 percent in some subhorizons

1191—Sahkahtay sandy loam, 0 to 2 percent slopes

Component Descriptions

Sahkahtay and similar soils

Extent: 85 percent of the unit

Geomorphic description: Swales on beach plains; flats on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.0 inches

Content of organic matter in the upper 10 inches: 1.6 percent

Cormant and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

Deerwood and similar soils

Extent: 5 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials over glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February)
Ponding is shallowest (depth, months): 0.3 foot (July, August, September)
Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)
Available water capacity to a depth of 60 inches: 8.1 inches
Content of organic matter in the upper 10 inches: 70.0 percent

Karlstad and similar soils

Extent: 3 percent of the unit
Geomorphic description: Beach ridges
Position on the landform: Backslopes
Slope range: 0 to 3 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Beach deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 3.0 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)
Ponding: None
Available water capacity to a depth of 60 inches: 3.2 inches
Content of organic matter in the upper 10 inches: 2.1 percent

Redby and similar soils

Extent: 2 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 1.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)
Ponding: None
Available water capacity to a depth of 60 inches: 4.8 inches
Content of organic matter in the upper 10 inches: 0.6 percent

Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Sax Series

Drainage class: Very poorly drained
Permeability: Upper part—moderate; lower part—moderately slow
Landform: Lake plains
Parent material: Organic materials over glaciolacustrine deposits
Slope range: 0 to 1 percent
Taxonomic classification: Fine-silty, mixed, superactive, nonacid, frigid Histic Humaquepts

Typical Pedon

Sax muck, 150 feet south and 400 feet east of the northwest corner of sec. 4, T. 162 N., R. 38 W.

- Oa—0 to 15 inches; muck, black (10YR 2/1) broken face and rubbed; about 5 percent fiber, 2 percent rubbed; weak fine subangular blocky structure parting to weak very fine subangular blocky; very friable; many fine and many very fine roots; neutral; clear wavy boundary.
- A—15 to 24 inches; black (N 2/0) mucky silt loam; weak fine subangular blocky structure; friable; many fine roots; neutral; clear smooth boundary.
- Bg—24 to 39 inches; olive gray (5Y 5/2) silty clay loam; few fine prominent strong brown (7.5YR 4/6) iron concentrations; moderate coarse subangular blocky structure; friable; common fine roots; few

distinct discontinuous light gray (5Y 7/2) carbonate coats on faces of peds; strongly effervescent; slightly alkaline; gradual wavy boundary.

Cg1—39 to 48 inches; olive gray (5Y 5/2) silty clay loam; common medium distinct light olive brown (2.5Y 5/6) and few fine prominent strong brown (7.5YR 4/6) iron concentrations; massive; friable; common fine roots; few distinct discontinuous light gray (5Y 7/2) carbonate coats on faces of peds; strongly effervescent; slightly alkaline; gradual wavy boundary.

Cg2—48 to 64 inches; olive gray (5Y 5/2) silty clay loam; common medium prominent yellowish brown (10YR 5/6) and common fine and medium distinct light olive brown (2.5Y 5/6) iron concentrations; massive; friable; common very fine and fine roots; few distinct discontinuous light gray (5Y 7/2) carbonate coats on faces of peds; strongly effervescent; slightly alkaline; gradual wavy boundary.

Cg3—64 to 71 inches; light olive gray (5Y 6/2) silt loam; common fine prominent yellowish brown (10YR 5/6) and common fine distinct olive yellow (2.5Y 6/6) iron concentrations; massive; friable; few distinct discontinuous light gray (5Y 7/2) carbonate coats on faces of peds; strongly effervescent; slightly alkaline; clear wavy boundary.

Cg4—71 to 80 inches; stratified dark gray (5Y 4/1) clay and light olive gray (5Y 6/2) silt loam; common fine prominent yellowish brown (10YR 5/6) and few fine prominent dark yellowish brown (10YR 4/4) iron concentrations; massive; firm; few distinct discontinuous light gray (5Y 7/2) carbonate coats on faces of peds; slightly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: 24 to 28 inches

Thickness of the organic material: 8 to 16 inches

Oa horizon:

Hue—10YR

Value—2

Chroma—1

Texture—muck

A horizon:

Hue—10YR, 2.5Y, or N

Value—2 or 3

Chroma—0 or 1

Texture—silt loam, silty clay loam, mucky silt loam, or mucky silty clay loam

Bg horizon:

Hue—2.5Y or 5Y

Value—4 to 6

Chroma—2

Texture—silt loam or silty clay loam

Cg horizon:

Hue—2.5Y or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—silt loam or silty clay loam

1154—Sax muck, 0 to 1 percent slopes

Component Descriptions

Sax and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 14.5 inches

Content of organic matter in the upper 10 inches: 47.5 percent

Wabanica and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silt loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, July, September, October, November)

Available water capacity to a depth of 60 inches: 12.0 inches

Content of organic matter in the upper 10 inches: 2.5 percent

Cathro and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 19.8 inches

Content of organic matter in the upper 10 inches: 72.5 percent

Woodslake and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Clay

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding depth: 0.5 foot all year

Available water capacity to a depth of 60 inches: 7.9 inches

Content of organic matter in the upper 10 inches: 3.4 percent

Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Seelyeville Series

Drainage class: Very poorly drained

Permeability: Moderately slow to moderately rapid

Landform: Lake plains

Parent material: Organic materials

Slope range: 0 to 1 percent

Taxonomic classification: Euic, frigid Typic Haplosaprists

Typical Pedon

Seelyeville muck, 2,000 feet south and 200 feet west of the northeast corner of sec. 16, T. 163 N., R. 38 W.

Oa1—0 to 12 inches; muck, black (10YR 2/1) broken face and rubbed; about 20 percent fiber, 5 percent rubbed; weak fine granular structure; very friable; many very fine and fine roots; neutral; clear smooth boundary.

Oa2—12 to 42 inches; muck, black (10YR 2/1) broken face and rubbed; about 25 percent fiber, 10 percent rubbed; weak fine subangular blocky structure; very friable; many very fine roots; neutral; clear smooth boundary.

Oa3—42 to 62 inches; muck, black (10YR 2/1) broken face and rubbed; about 20 percent fiber, 5 percent rubbed; weak fine subangular blocky structure; very friable; common very fine roots; neutral; clear smooth boundary.

Oa4—62 to 76 inches; muck, black (10YR 2/1) broken face and rubbed; about 5 percent fiber, 2 percent rubbed; massive; very friable; neutral; abrupt smooth boundary.

Cg—76 to 80 inches; very dark gray (N 3/0) silty clay; common medium faint dark gray (N 4/0) iron depletions; massive; firm; slightly effervescent; neutral.

Range in Characteristics

Depth to carbonates: More than 51 inches

Thickness of the organic material: More than 51 inches

Other features: Some pedons have a Cg horizon at a depth of more than 51 inches.

Oa horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—muck

540—Seelyeville muck, 0 to 1 percent slopes

Component Descriptions

Seelyeville and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 62.0 percent

Cathro and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 19.8 inches

Content of organic matter in the upper 10 inches: 72.5 percent

Dora and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 18.3 inches

Content of organic matter in the upper 10 inches: 55.5 percent

Markey and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 17.9 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1031—Seelyeville muck, ponded, 0 to 1 percent slopes

Component Descriptions

Seelyeville, ponded, and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials

Flooding: None

Wet soil moisture status: At the surface all year

Ponding depth: 1.0 foot all year

Available water capacity to a depth of 60 inches: 23.9 inches

Content of organic matter in the upper 10 inches: 62.0 percent

Cathro and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 19.8 inches

Content of organic matter in the upper 10 inches: 72.5 percent

Dora and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 18.3 inches

Content of organic matter in the upper 10 inches: 55.5 percent

Markey and similar soils

Extent: 0 to 10 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot
(January, February, July, August, September,
October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March,
April, May, June)

Available water capacity to a depth of 60 inches: 17.9
inches

Content of organic matter in the upper 10 inches: 70.0
percent

Management

Major uses: Wildlife habitat

For general and detailed information about
managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Skagen Series

Drainage class: Moderately well drained

Permeability: Moderate

Landform: Lake plains

Parent material: Till

Slope range: 0 to 3 percent

Taxonomic classification: Coarse-loamy, mixed,
superactive, frigid Aquic Calciudolls

Typical Pedon

Skagen loam, 1,100 feet south and 2,450 feet west of
the northeast corner of sec. 34, T. 161 N., R. 42 W.

Ap—0 to 9 inches; black (10YR 2/1) loam, very dark
grayish brown (10YR 3/2) dry; weak medium
subangular blocky structure parting to weak fine
subangular blocky; friable; few fine roots; slightly
effervescent; 3 percent gravel; slightly alkaline;
clear smooth boundary.

Bk1—9 to 15 inches; light brownish gray (10YR 6/2)
loam; weak medium subangular blocky structure
parting to weak fine subangular blocky; friable; few
fine roots; violently effervescent; 3 percent gravel;
slightly alkaline; gradual wavy boundary.

Bk2—15 to 19 inches; light brownish gray (10YR 6/2)
loam; common medium distinct light yellowish
brown (2.5Y 6/4) and few fine distinct light olive
brown (2.5Y 5/6) iron concentrations; weak
medium subangular blocky structure parting to
weak fine subangular blocky; friable; few fine roots;
violently effervescent; 3 percent gravel;
moderately alkaline; clear wavy boundary.

C1—19 to 42 inches; light yellowish brown (2.5Y 6/4)
loam; common coarse prominent yellowish brown
(10YR 5/6) and few medium prominent strong
brown (7.5YR 5/6) iron concentrations; massive;
friable; common fine and medium white (10YR
8/1) soft masses of lime between peds; strongly
effervescent; 5 percent gravel; moderately
alkaline; gradual wavy boundary.

C2—42 to 80 inches; light yellowish brown (2.5Y 6/4)
loam; common medium prominent brownish yellow
(10YR 6/6) and few fine prominent strong brown
(7.5YR 5/6) iron concentrations; massive; friable;
common fine and medium white (10YR 8/1) soft
masses of lime between peds; strongly
effervescent; 5 percent gravel; moderately
alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 10 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loam

Content of rock fragments—0 to 10 percent

Bk horizon:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—1 to 4

Texture—loam, fine sandy loam, or sandy loam

Content of rock fragments—5 to 15 percent

C horizon:

Hue—2.5Y

Value—5 or 6

Chroma—2 to 4

Texture—loam or fine sandy loam

Content of rock fragments—5 to 15 percent

1158—Skagen loam, 0 to 3 percent slopes

Component Descriptions

Skagen and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60
inches)

Drainage class: Moderately well drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months):
2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7
feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.2
inches

Content of organic matter in the upper 10 inches: 6.1
percent

Percy and similar soils

Extent: 10 percent of the unit

Geomorphic description: Flats on lake plains; swales
on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60
inches)

Drainage class: Poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months):
0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8
feet (August)

Ponding does not occur (months): January, February,
March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April,
May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.1
inches

Content of organic matter in the upper 10 inches: 6.5
percent

Foxhome and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60
inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months):
2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7
feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3
inches

Content of organic matter in the upper 10 inches: 5.0
percent

Management

Major uses: Cropland; pasture and hayland

For general and detailed information about
managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1170—Skagen loam, 0 to 3 percent slopes, very cobbly

Component Descriptions

Skagen, very cobbly, and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60
inches)

Drainage class: Moderately well drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months):
2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7
feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.2
inches

Content of organic matter in the upper 10 inches: 6.5
percent

Percy, very cobbly, and similar soils

Extent: 10 percent of the unit

Geomorphic description: Flats on lake plains; swales
on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60
inches)

Drainage class: Poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months):
0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8
feet (August)

Ponding does not occur (months): January, February,
March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)
Available water capacity to a depth of 60 inches: 10.0 inches
Content of organic matter in the upper 10 inches: 5.4 percent

Foxhome and similar soils

Extent: 5 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 8.3 inches
Content of organic matter in the upper 10 inches: 5.0 percent

Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Skime Series

Drainage class: Moderately well drained
Permeability: Moderately rapid or rapid
Landform: Lake plains
Parent material: Glaciolacustrine deposits
Slope range: 0 to 4 percent
Taxonomic classification: Coarse-loamy, mixed, superactive, frigid Oxyaquic Hapludalfs

Typical Pedon

Skime loamy fine sand, 2,600 feet south and 800 feet west of the northeast corner of sec. 31, T. 161 N., R. 38 W.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) loamy fine sand, grayish brown (10YR 5/2) dry;

weak fine subangular blocky structure; very friable; common very fine and fine roots; neutral; abrupt smooth boundary.

- E—6 to 17 inches; grayish brown (10YR 5/2) fine sand; weak thick platy structure parting to weak coarse subangular blocky; very friable; common very fine roots; neutral; clear smooth boundary.
- Bt—17 to 22 inches; brown (10YR 4/3) fine sandy loam; weak fine subangular blocky structure; very friable; common very fine roots; few distinct discontinuous dark brown (10YR 3/3) clay films on faces of peds; neutral; clear smooth boundary.
- C1—22 to 38 inches; pale brown (10YR 6/3) fine sand; few fine faint light yellowish brown (10YR 6/4) iron concentrations; single grain; loose; few very fine roots; very slightly effervescent; slightly alkaline; clear wavy boundary.
- C2—38 to 52 inches; light brownish gray (10YR 6/2) fine sand; few fine distinct brownish yellow (10YR 6/6) and few fine faint pale brown (10YR 6/3) iron concentrations; single grain; loose; very slightly effervescent; slightly alkaline; gradual wavy boundary.
- C3—52 to 72 inches; light brownish gray (10YR 6/2) fine sand; common medium prominent strong brown (7.5YR 4/6) iron concentrations; single grain; loose; few fine prominent black (N 2/0) manganese nodules; slightly effervescent; slightly alkaline; gradual wavy boundary.
- C4—72 to 80 inches; light brownish gray (10YR 6/2), stratified fine sand, very fine sandy loam, and silt loam; few fine prominent strong brown (7.5YR 4/6) and common medium prominent yellowish brown (10YR 5/6) iron concentrations; massive; very friable; few fine faint light gray (10YR 7/2) threads and soft masses of lime between peds; strongly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: 14 to 24 inches

Content of rock fragments: 0 to 3 percent

Other features: Some pedons have a Bk horizon. This horizon has colors and textures similar to those of the C horizon. Also, some pedons have a 2C horizon, which is silt loam or very fine sandy loam.

A or Ap horizon:

Hue—10YR

Value—2 to 5

Chroma—1 to 3

Texture—loamy fine sand

E horizon:

Hue—10YR

Value—4 or 5

Chroma—2 to 4

Texture—loamy fine sand, fine sand, or loamy sand

Bt horizon:

Hue—10YR or 2.5Y

Value—3 to 5

Chroma—2 to 4

Texture—fine sandy loam, sandy loam, or loamy fine sand

C horizon:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—2 to 4

Texture—very fine sandy loam, loamy very fine sand, very fine sand, fine sand, sand, or silt loam; stratified with these textures in some pedons

1133B—Skime loamy fine sand, 0 to 4 percent slopes

Component Descriptions

Skime and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 4 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 5.1 inches

Content of organic matter in the upper 10 inches: 0.9 percent

Hiwood and similar soils

Extent: 10 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.7 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Zippel and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 10.9 inches

Content of organic matter in the upper 10 inches: 4.0 percent

Management

Major uses: Pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Spooner Series

Drainage class: Poorly drained

Permeability: Moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, frigid Mollic Endoaqualls

Typical Pedon

Spooner very fine sandy loam, 600 feet south and 2,100 feet west of the northeast corner of sec. 20, T. 161 N., R. 31 W., in Lake of the Woods County, Minnesota:

Ap—0 to 6 inches; very dark gray (10YR 3/1) very fine sandy loam, gray (10YR 5/1) dry; weak very fine subangular blocky structure; very friable; slightly alkaline; abrupt smooth boundary.

E—6 to 15 inches; light brownish gray (2.5Y 6/2) loamy very fine sand; common fine faint light gray (2.5Y 7/2) iron depletions and common fine prominent yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/4) iron concentrations; weak very thin platy structure; very friable; neutral; clear smooth boundary.

Btg—15 to 22 inches; olive gray (5Y 5/2) loam; common fine prominent olive brown (2.5Y 4/4) and few fine prominent yellowish red (5YR 4/8) iron concentrations; moderate very fine angular blocky structure; friable; common distinct grayish brown (2.5Y 5/2) clay films on faces of peds; slightly alkaline; clear smooth boundary.

Cg1—22 to 30 inches; light olive gray (5Y 6/2) silt loam; common fine prominent light olive brown (2.5Y 5/4) and yellowish brown (10YR 5/6) iron concentrations and common fine faint light gray (5Y 7/2) iron depletions; massive; very friable; strongly effervescent; slightly alkaline; gradual wavy boundary.

Cg2—30 to 60 inches; light olive gray (5Y 6/2) laminated silt; common fine prominent yellowish brown (10YR 5/6), light olive brown (2.5Y 5/4), and strong brown (7.5YR 5/8) iron concentrations and common fine faint light gray (5Y 7/2) iron depletions; massive; very friable; strongly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: 16 to 40 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1

Texture—very fine sandy loam

E horizon:

Hue—2.5Y

Value—5 or 6

Chroma—2

Texture—loamy very fine sand or very fine sandy loam

Btg horizon:

Hue—2.5Y or 5Y

Value—4 or 5

Chroma—2

Texture—silty clay loam

Cg horizon:

Hue—2.5Y or 5Y

Value—5 or 6

Chroma—2

Texture—very fine sandy loam, silt loam, silt, silty clay loam, or silt loam stratified with clay, silty clay loam, or very fine sandy loam

147—Spooner very fine sandy loam, 0 to 2 percent slopes

Component Descriptions

Spooner and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 2.1 percent

Baudette and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):
2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7
feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 11.9
inches

Content of organic matter in the upper 10 inches: 2.1
percent

Grygla and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats
on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60
inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits and till

Flooding: None

Wet soil moisture status is highest (depth, months):
0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1
feet (August)

Ponding does not occur (months): January, February,
March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April,
May)

Available water capacity to a depth of 60 inches: 8.7
inches

Content of organic matter in the upper 10 inches: 1.8
percent

Sago and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60
inches)

Drainage class: Very poorly drained

Parent material: Organic materials over
glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At
the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5
feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July,
August, September)

Ponding is deepest (depth, months): 0.5 foot (January,
February, March, April, May, June, October,
November, December)

Available water capacity to a depth of 60 inches: 13.4
inches

Content of organic matter in the upper 10 inches: 72.5
percent

Management

Major uses: Forest land and pasture

For general and detailed information about
managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Strandquist Series

Drainage class: Poorly drained

Permeability: Upper part—rapid; lower part—moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 2 percent

Taxonomic classification: Sandy-skeletal over loamy,
mixed, superactive, calcareous, frigid Typic
Endoaquolls

Typical Pedon

Strandquist loam, 1,000 feet south and 200 feet
west of the northeast corner of sec. 7, T. 160 N., R.
40 W.

Ap—0 to 8 inches; black (10YR 2/1) loam, very dark
gray (10YR 3/1) dry; weak fine subangular blocky
structure; friable; many fine and very fine roots; 1
percent gravel; slightly alkaline; abrupt smooth
boundary.

2Bg1—8 to 20 inches; grayish brown (2.5Y 5/2) very
gravelly sand; few fine distinct brownish yellow
(10YR 6/6) iron concentrations; single grain; loose;
few fine and very fine roots; 50 percent gravel; 2
percent cobbles; slightly effervescent; slightly
alkaline; gradual wavy boundary.

2Bg2—20 to 35 inches; light brownish gray (2.5Y 6/2)
very gravelly sand; few fine prominent brownish
yellow (10YR 6/6) iron concentrations; single
grain; loose; few fine and very fine roots; 50
percent gravel; 5 percent cobbles; strongly
effervescent; slightly alkaline; clear wavy
boundary.

3Cg—35 to 80 inches; light brownish gray (2.5Y 6/2)
loam; common medium prominent brownish yellow
(10YR 6/6) and few fine prominent dark yellowish
brown (10YR 4/6) iron concentrations; massive;

friable; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 10 inches or less

Thickness of the mollic epipedon: 7 to 12 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loam

Content of rock fragments—0 to 10 percent

2Bg horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 or 2

Texture—loamy sand, sand, loamy coarse sand, or coarse sand

Content of rock fragments—35 to 75 percent

3Cg horizon:

Hue—2.5Y or 5Y

Value—5 or 6

Chroma—2

Texture—sandy loam, fine sandy loam, loam, or silty clay loam

Content of rock fragments—3 to 10 percent

432—Strandquist loam, 0 to 2 percent slopes

Component Descriptions

Strandquist and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 3.6 percent

Percy, very cobbly, and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.0 inches

Content of organic matter in the upper 10 inches: 5.4 percent

Haug and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Boash and similar soils

Extent: 3 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.6 inches

Content of organic matter in the upper 10 inches: 4.3 percent

Foxhome and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.3 inches

Content of organic matter in the upper 10 inches: 5.0 percent

Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section

- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Strathcona Series

Drainage class: Very poorly drained and poorly drained

Permeability: Upper part—moderately rapid; lower part—moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits over till

Slope range: 0 to 2 percent

Taxonomic classification: Sandy over loamy, mixed, superactive, frigid Typic Calciaquolls

Typical Pedon

Strathcona fine sandy loam (fig. 11), 1,500 feet south and 600 feet west of the northeast corner of sec. 34, T. 159 N., R. 40 W.

Ap—0 to 10 inches; black (10YR 2/1) fine sandy loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure; very friable; many very fine and fine roots; strongly effervescent; moderately alkaline; abrupt wavy boundary.

Bkg—10 to 17 inches; dark gray (10YR 4/1) fine sandy loam; weak fine subangular blocky structure; very friable; common very fine and fine roots; violently effervescent; moderately alkaline; clear wavy boundary.

Cg1—17 to 28 inches; light brownish gray (2.5Y 6/2) fine sand; common fine distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; abrupt wavy boundary.

2Cg2—28 to 56 inches; grayish brown (2.5Y 5/2) clay loam; common fine and medium prominent strong brown (7.5YR 5/8) iron concentrations; massive; friable; strongly effervescent; 3 percent gravel; slightly alkaline; gradual wavy boundary.

2Cg3—56 to 80 inches; dark grayish brown (2.5Y 4/2) loam; common fine and medium prominent strong brown (7.5YR 5/8) iron concentrations and common fine distinct gray (10YR 5/1) iron depletions; massive; friable; strongly effervescent; 8 percent gravel; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 14 inches

Ap or A horizon:

Hue—10YR or N

Value—2 or 3

Chroma—0 or 1

Texture—fine sandy loam or mucky loam
Content of rock fragments—0 to 2 percent

Bkg horizon:

Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—sandy loam or fine sandy loam
Content of rock fragments—0 to 5 percent

Cg horizon:

Hue—2.5Y or 5Y
Value—4 to 7
Chroma—2
Texture—sand, fine sand, or loamy fine sand
Content of rock fragments—0 to 10 percent

2Cg horizon:

Hue—2.5Y or 5Y
Value—4 to 6
Chroma—2
Texture—fine sandy loam, loam, or clay loam
Content of rock fragments—2 to 10 percent

439—Strathcona fine sandy loam, 0 to 2 percent slopes

Component Descriptions

Strathcona and similar soils

Extent: 85 percent of the unit
Geomorphic description: Flats on lake plains; swales on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 4.1 feet (August)
Ponding does not occur (months): January, February, March, July, August, September, December
Ponding is deepest (depth, months): 0.3 foot (April, May)
Available water capacity to a depth of 60 inches: 8.5 inches
Content of organic matter in the upper 10 inches: 4.5 percent

Northwood and similar soils

Extent: 5 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials over glaciolacustrine deposits or till
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February)
Ponding is shallowest (depth, months): 0.3 foot (July, August, September)
Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)
Available water capacity to a depth of 60 inches: 11.8 inches
Content of organic matter in the upper 10 inches: 67.5 percent

Percy and similar soils

Extent: 5 percent of the unit
Geomorphic description: Flats on lake plains; swales on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 3.8 feet (August)
Ponding does not occur (months): January, February, March, July, August, December
Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)
Available water capacity to a depth of 60 inches: 10.1 inches
Content of organic matter in the upper 10 inches: 6.5 percent

Grimstad and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): 1.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)
Ponding: None
Available water capacity to a depth of 60 inches: 8.3 inches
Content of organic matter in the upper 10 inches: 3.0 percent

Strandquist and similar soils

Extent: 2 percent of the unit
Geomorphic description: Flats on lake plains; swales on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 4.1 feet (August)
Ponding does not occur (months): January, February, March, July, August, September, November, December
Ponding is deepest (depth, months): 0.3 foot (April, May, June, October)
Available water capacity to a depth of 60 inches: 6.3 inches
Content of organic matter in the upper 10 inches: 3.6 percent

Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

1144—Strathcona and Kratka soils, depressional, 0 to 1 percent slopes

Component Descriptions

Strathcona, depressional, and similar soils

Extent: 0 to 90 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Mucky fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February, August)
Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)
Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)
Available water capacity to a depth of 60 inches: 8.7 inches
Content of organic matter in the upper 10 inches: 15.0 percent

Kratka, depressional, and similar soils

Extent: 0 to 90 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Mucky fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February, August)
Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)
Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)
Available water capacity to a depth of 60 inches: 8.1 inches
Content of organic matter in the upper 10 inches: 13.9 percent

Kratka and similar soils

Extent: 5 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 8.2 inches

Content of organic matter in the upper 10 inches: 2.9 percent

Northwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits or till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 11.8 inches

Content of organic matter in the upper 10 inches: 67.5 percent

Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Syrene Series

Drainage class: Very poorly drained and poorly drained

Permeability: Rapid

Landform: Beach plains

Parent material: Beach deposits

Slope range: 0 to 2 percent

Taxonomic classification: Sandy, mixed, frigid Typic Calciaquolls

Typical Pedon

Syrene sandy loam, 1,100 feet north and 300 feet west of the southeast corner of sec. 8, T. 159 N., R. 41 W.

Ap—0 to 11 inches; black (10YR 2/1) sandy loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to weak very fine subangular blocky; friable; many very fine and fine roots and few medium roots; strongly effervescent; 2 percent gravel; slightly alkaline; clear smooth boundary.

Bkg1—11 to 19 inches; light brownish gray (2.5Y 6/2) fine sandy loam; few fine prominent olive yellow (2.5Y 6/8) iron concentrations; weak fine subangular blocky structure; friable; many fine and many very fine roots; many light gray (10YR 7/2) carbonate coats on faces of peds and in pores; violently effervescent; 10 percent gravel; slightly alkaline; clear wavy boundary.

2Bkg2—19 to 28 inches; light brownish gray (2.5Y 6/2) gravelly coarse sand; few medium distinct olive yellow (2.5Y 6/6) and few medium prominent yellowish brown (10YR 5/4) iron concentrations; single grain; loose; few fine roots; few distinct light gray (10YR 7/2) carbonate coats on faces of peds and in pores; violently effervescent; 20 percent gravel; slightly alkaline; clear wavy boundary.

2Cg1—28 to 42 inches; grayish brown (2.5Y 5/2) gravelly coarse sand; many medium distinct light olive brown (2.5Y 5/6) and olive yellow (2.5Y 6/6) and few medium prominent brownish yellow (10YR 6/6) iron concentrations; single grain; loose; strongly effervescent; 25 percent gravel; slightly alkaline; clear wavy boundary.

2Cg2—42 to 48 inches; grayish brown (2.5Y 5/2) coarse sand; common fine distinct light olive brown (2.5Y 5/6) and common fine prominent

yellowish brown (10YR 5/6) iron concentrations; single grain; loose; strongly effervescent; 5 percent gravel; slightly alkaline; clear wavy boundary.

2Cg3—48 to 60 inches; grayish brown (2.5Y 5/2) gravelly coarse sand; many medium distinct light olive brown (2.5Y 5/6), many fine prominent yellowish brown (10YR 5/6), and common fine distinct olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; strongly effervescent; 33 percent gravel; slightly alkaline; clear wavy boundary.

2Cg4—60 to 65 inches; light olive gray (5Y 6/2) sand; common medium prominent yellowish brown (10YR 5/6) and few medium prominent olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; slightly effervescent; 7 percent gravel; slightly alkaline; clear wavy boundary.

2Cg5—65 to 80 inches; light olive gray (5Y 6/2) gravelly sand; few medium prominent yellowish brown (10YR 5/6 and 5/4) iron concentrations; single grain; loose; slightly effervescent; 20 percent gravel; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 8 to 12 inches

A or Ap horizon:

Hue—10YR or N

Value—2 or 3

Chroma—0 or 1

Texture—sandy loam or mucky sandy loam

Content of rock fragments—0 or 5 percent

Bkg horizon:

Hue—2.5Y or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—sandy loam, fine sandy loam, or sandy clay loam

Content of rock fragments—2 to 10 percent

2Bkg horizon:

Hue—2.5Y

Value—5 to 7

Chroma—2

Texture—coarse sand, fine sand, or loamy sand

Content of rock fragments—15 to 35 percent

2Cg horizon:

Hue—2.5Y or 5Y

Value—4 to 6

Chroma—2

Texture—coarse sand, sand, or fine sand

Content of rock fragments—5 to 50 percent

433—Syrene mucky sandy loam, depressional, 0 to 1 percent slopes

Component Descriptions

Syrene, depressional, and similar soils

Extent: 85 percent of the unit

Geomorphic description: Depressions on beach plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 4.2 inches

Content of organic matter in the upper 10 inches: 6.5 percent

Deerwood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.1 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Rosewood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 5.5 percent

Syrene soils that are not in depressions

Extent: 5 percent of the unit

Geomorphic description: Flats on beach plains; swales on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, October, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.3 inches

Content of organic matter in the upper 10 inches: 5.5 percent

Management

Major uses: Pasture and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

435—Syrene sandy loam, 0 to 2 percent slopes**Component Descriptions****Syrene and similar soils**

Extent: 85 percent of the unit

Geomorphic description: Flats on beach plains; swales on beach plains

Slope range: 0 to 2 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.3 foot (April)

Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)

Ponding does not occur (months): January, February, March, July, August, September, October, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.3 inches

Content of organic matter in the upper 10 inches: 5.5 percent

Rosewood and similar soils

Extent: 5 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 5.5 percent

Syrene, depressional, and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on beach plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 4.2 inches

Content of organic matter in the upper 10 inches: 6.5 percent

Karlsruhe and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on beach plains

Slope range: 0 to 3 percent

Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.0 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.2 inches

Content of organic matter in the upper 10 inches: 4.8 percent

Deerwood and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 8.1 inches

Content of organic matter in the upper 10 inches: 70.0 percent

Management

Major uses: Cropland; pasture and hayland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Tacoosh Series

Drainage class: Very poorly drained

Permeability: Upper part—moderate or moderately rapid; lower part—moderately slow or moderate

Landform: Lake plains

Parent material: Organic materials over glaciolacustrine deposits

Slope range: 0 to 1 percent

Taxonomic classification: Loamy, mixed, euic, frigid Terric Haplohemists

Typical Pedon

Tacoosh mucky peat, 2,700 feet south and 1,000 feet west of the northeast corner of sec. 36, T. 163 N., R. 39 W.

Oe1—0 to 17 inches; mucky peat, dark brown (7.5YR 3/3) broken face and pressed, dark brown (7.5YR 3/2) rubbed; about 52 percent fiber, 28 percent rubbed; weak thin and medium platy structure; very friable; few fine and many very fine roots; neutral; gradual wavy boundary.

Oe2—17 to 31 inches; mucky peat, very dark brown (10YR 2/2) broken face and pressed, black (10YR 2/1) rubbed; about 37 percent fiber, 18 percent rubbed; weak thin and medium platy structure; very friable; few fine and many very fine roots; neutral; gradual wavy boundary.

Oa—31 to 33 inches; muck, black (10YR 2/1) broken face, very dark gray (10YR 3/1) rubbed; about 18 percent fiber, 8 percent rubbed; weak thin platy structure; very friable; common fine and many very fine roots; neutral; clear wavy boundary.

A—33 to 39 inches; black (N 2/0) silty clay loam; weak fine subangular blocky structure; friable; neutral; clear wavy boundary.

Cg1—39 to 57 inches; grayish brown (2.5Y 5/2) silt loam; common fine faint light olive brown (2.5Y 5/3) iron concentrations; massive; friable; few fine faint irregular light gray (2.5Y 7/2) soft masses of lime on faces of peds; strongly effervescent; slightly alkaline; clear wavy boundary.

Cg2—57 to 66 inches; light brownish gray (2.5Y 6/2) silt loam; common fine distinct olive yellow (2.5Y 6/6) and few fine prominent strong brown (7.5YR 4/6) iron concentrations; weak thin platy soil fragments; friable; very few distinct patchy light gray (10YR 7/1) silt coats on faces of peds; slightly effervescent; slightly alkaline; clear wavy boundary.

Cg3—66 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; common fine distinct olive yellow (2.5Y 6/6) and light olive brown (2.5Y 5/6) iron concentrations; weak thin platy soil fragments; friable; very few distinct patchy light gray (10YR 7/1) silt coats on faces of peds; slightly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: 16 to more than 51 inches
Thickness of the organic material: 16 to 51 inches

Oe horizon:

Hue—10YR, 7.5YR, or 5YR
 Value—2 or 3
 Chroma—1 or 3
 Texture—mucky peat

Oa horizon:

Hue—10YR
 Value—2 or 3

Chroma—1
 Texture—muck

A horizon:

Value—2 or 3
 Texture—silty clay loam

Cg horizon:

Hue—10YR or 2.5Y
 Value—4 to 6
 Chroma—1 or 2
 Texture—silt loam or silty clay loam

1314—Tacoosh mucky peat, MAP 22-30, 0 to 1 percent slopes

Component Descriptions

Tacoosh and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky peat

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 21.6 inches

Content of organic matter in the upper 10 inches: 87.0 percent

Rifle and similar soils

Extent: 8 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky peat

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 1.6 feet (February, August)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 31.7 inches

Content of organic matter in the upper 10 inches: 82.0 percent

Sax and similar soils

Extent: 2 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 14.5 inches

Content of organic matter in the upper 10 inches: 47.5 percent

Management

Major uses: Pasture, wildlife habitat, and cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Tawas Series

Drainage class: Very poorly drained

Permeability: Upper part—moderately slow to moderately rapid; lower part—rapid

Landform: Lake plains

Parent material: Organic materials over glaciolacustrine deposits

Slope range: 0 to 1 percent

Taxonomic classification: Sandy or sandy-skeletal, mixed, euic, frigid Terric Haplosaprists

Typical Pedon

Tawas muck, 2,300 feet north and 400 feet east of the southwest corner of sec. 27, T. 161 N., R. 37 W.

Oa1—0 to 10 inches; muck, black (10YR 2/1) broken face and rubbed; about 25 percent fiber, 15 percent rubbed; moderate very fine and fine granular structure; very friable; common very fine to medium roots and few coarse roots; 10 percent wood fragments; moderately acid; clear wavy boundary.

Oa2—10 to 27 inches; muck, black (N 2/0) broken face and rubbed; about 20 percent fiber, 10 percent rubbed; weak fine and medium subangular blocky structure parting to weak fine granular; very friable; few very fine to medium roots; 2 percent wood fragments; moderately acid; abrupt smooth boundary.

Cg1—27 to 39 inches; olive gray (5Y 4/2) sand; common fine and medium faint dark olive gray (5Y 3/2) iron depletions; single grain; loose; few very fine and fine roots; slightly acid; clear wavy boundary.

Cg2—39 to 45 inches; grayish brown (2.5Y 5/2) sand; common fine and medium faint dark grayish brown (2.5Y 4/2) iron depletions; single grain; loose; moderately acid; clear wavy boundary.

Cg3—45 to 58 inches; grayish brown (2.5Y 5/2) sand; common medium prominent strong brown (7.5YR 4/6) iron concentrations; single grain; loose; 2 percent gravel; moderately acid; gradual wavy boundary.

Cg4—58 to 80 inches; light olive brown (2.5Y 5/3) sand; common medium distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; 2 percent gravel; moderately acid.

Range in Characteristics

Depth to carbonates: More than 60 inches

Thickness of the organic material: 16 to 51 inches

Other features: Some pedons have an A horizon.

Oa horizon:

Hue—10YR or N

Value—2

Chroma—0 to 2

Texture—muck

Content of wood fragments—0 to 15 percent

Cg horizon:

Hue—5Y or 2.5Y

Value—3 to 6

Chroma—1 to 3

Texture—loamy fine sand, fine sand, or sand

Content of rock fragments—0 to 5 percent

627—Tawas muck, MAP 22-30, 0 to 1 percent slopes***Component Descriptions*****Tawas and similar soils***Extent:* 90 percent of the unit*Geomorphic description:* Depressions on lake plains*Slope range:* 0 to 1 percent*Texture of the surface layer:* Muck*Depth to restrictive feature:* Very deep (more than 60 inches)*Drainage class:* Very poorly drained*Parent material:* Organic materials over glaciolacustrine deposits*Flooding:* None*Wet soil moisture status is highest (depth, months):* At the surface (March, April, May)*Wet soil moisture status is lowest (depth, months):* 2.5 feet (February)*Ponding is shallowest (depth, months):* 0.2 foot (July, August, September)*Ponding is deepest (depth, months):* 0.3 foot (January, February, March, April, May, June, October, November, December)*Available water capacity to a depth of 60 inches:* 13.2 inches*Content of organic matter in the upper 10 inches:* 50.0 percent**Leafriver and similar soils***Extent:* 4 percent of the unit*Geomorphic description:* Depressions on lake plains*Slope range:* 0 to 1 percent*Texture of the surface layer:* Muck*Depth to restrictive feature:* Very deep (more than 60 inches)*Drainage class:* Very poorly drained*Parent material:* Organic materials over glaciolacustrine deposits*Flooding:* None*Wet soil moisture status is highest (depth, months):* At the surface (March, April, May)*Wet soil moisture status is lowest (depth, months):* 2.5 feet (February)*Ponding is shallowest (depth, months):* 0.2 foot (July, August, September)*Ponding is deepest (depth, months):* 0.3 foot (January, February, March, April, May, June, October, November, December)*Available water capacity to a depth of 60 inches:* 7.4 inches*Content of organic matter in the upper 10 inches:* 70.0 percent**Lupton and similar soils***Extent:* 4 percent of the unit*Geomorphic description:* Depressions on lake plains*Slope range:* 0 to 1 percent*Texture of the surface layer:* Muck*Depth to restrictive feature:* Very deep (more than 60 inches)*Drainage class:* Very poorly drained*Parent material:* Organic materials*Flooding:* None*Wet soil moisture status is highest (depth, months):* At the surface (March, April, May)*Wet soil moisture status is lowest (depth, months):* 1.6 feet (February, August)*Ponding is shallowest (depth, months):* 0.2 foot (July, August, September)*Ponding is deepest (depth, months):* 0.3 foot (January, February, March, April, May, June, October, November, December)*Available water capacity to a depth of 60 inches:* 23.9 inches*Content of organic matter in the upper 10 inches:* 80.0 percent**Cormant and similar soils***Extent:* 2 percent of the unit*Geomorphic description:* Flats on lake plains; swales on lake plains*Slope range:* 0 to 2 percent*Texture of the surface layer:* Loamy fine sand*Depth to restrictive feature:* Very deep (more than 60 inches)*Drainage class:* Poorly drained*Parent material:* Glaciolacustrine deposits*Flooding:* None*Wet soil moisture status is highest (depth, months):* 0.5 foot (April)*Wet soil moisture status is lowest (depth, months):* 4.9 feet (August)*Ponding does not occur (months):* January, February, March, July, August, September, November, December*Ponding is deepest (depth, months):* 0.3 foot (April, May)*Available water capacity to a depth of 60 inches:* 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Thief river Series

Drainage class: Poorly drained

Permeability: Upper part—moderately rapid; lower part—slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Sandy over clayey, mixed over smectitic, frigid Typic Calciaquolls

Typical Pedon

Thief river fine sandy loam, 200 feet south and 200 feet east of the northwest corner of sec. 11, T. 159 N., R. 40 W.

Ap—0 to 10 inches; black (10YR 2/1) fine sandy loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure parting to weak very fine subangular blocky; friable; common fine roots; slightly effervescent; slightly alkaline; clear smooth boundary.

Bkg—10 to 16 inches; gray (10YR 5/1) fine sandy loam; weak fine subangular blocky structure parting to weak very fine subangular blocky; friable; common fine roots; violently effervescent; moderately alkaline; clear smooth boundary.

Cg1—16 to 30 inches; light brownish gray (2.5Y 6/2) fine sand; many coarse prominent olive yellow (2.5Y 6/8) iron concentrations; single grain; loose; slightly alkaline; gradual wavy boundary.

Cg2—30 to 35 inches; light gray (2.5Y 7/2) fine sand; common medium prominent olive yellow (2.5Y 6/8) iron concentrations; single grain; loose; slightly alkaline; clear wavy boundary.

2Cg3—35 to 80 inches; olive gray (5Y 4/2) clay stratified with bands of light gray (5Y 7/2) silt loam 1/16 to 1/4 inch thick; few medium distinct light olive brown (2.5Y 5/6) iron concentrations; moderate medium platy soil fragments; firm; few fine

irregularly shaped white (2.5Y 8/1) soft masses of lime between plates; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 10 inches

Ap horizon:

Hue—10YR

Value—2

Chroma—1

Texture—fine sandy loam

Bkg horizon:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—1 or 2

Texture—fine sandy loam or loamy fine sand

Cg horizon:

Hue—10YR or 2.5Y

Value—5 to 7

Chroma—2

Texture—fine sand

2Cg horizon:

Hue—2.5Y or 5Y

Value—4 or 5

Chroma—2

Texture—clay, silty clay, or clay stratified with silt loam and very fine sandy loam

651—Thief river fine sandy loam, 0 to 2 percent slopes

Component Descriptions

Thief river and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 7.6 inches
Content of organic matter in the upper 10 inches: 3.0 percent

Grano and similar soils

Extent: 5 percent of the unit
Geomorphic description: Swales on lake plains; flats on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (April)
Wet soil moisture status is lowest (depth, months): 3.0 feet (August)
Ponding does not occur (months): January, February, March, December
Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)
Available water capacity to a depth of 60 inches: 9.7 inches
Content of organic matter in the upper 10 inches: 3.5 percent

Huot and similar soils

Extent: 5 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 7.9 inches
Content of organic matter in the upper 10 inches: 3.0 percent

Wildwood and similar soils

Extent: 5 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent

Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials over glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February)
Ponding is shallowest (depth, months): 0.3 foot (July, August, September)
Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)
Available water capacity to a depth of 60 inches: 5.7 inches
Content of organic matter in the upper 10 inches: 62.0 percent

Management

Major uses: Cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Two Inlets Series

Drainage class: Excessively drained
Permeability: Upper part—rapid; lower part—very rapid
Landform: Beach ridges
Parent material: Beach deposits
Slope range: 0 to 6 percent
Taxonomic classification: Mixed, frigid Psammentic Hapludalfs

Typical Pedon

Two Inlets loamy sand, 2,200 feet north and 200 feet west of the southeast corner of sec. 32, T. 161 N., R. 37 W.

A—0 to 2 inches; very dark gray (10YR 3/1) loamy sand, dark grayish brown (10YR 4/2) dry; weak fine and medium granular structure; very friable; many very fine to medium roots; 1 percent gravel; neutral; clear smooth boundary.

- E—2 to 4 inches; brown (10YR 4/3) loamy coarse sand; weak fine granular structure; very friable; many very fine and fine roots and common medium and coarse roots; 1 percent gravel; slightly acid; clear smooth boundary.
- Bt—4 to 17 inches; brown (7.5YR 4/3) loamy coarse sand; weak fine and medium granular structure; very friable; many very fine roots and common fine and medium roots; few faint patchy brown (7.5YR 4/4) clay films and bridges between sand grains; 2 percent gravel; slightly acid; clear wavy boundary.
- C1—17 to 28 inches; yellowish brown (10YR 5/4) coarse sand; single grain; loose; common very fine and fine roots; 5 percent gravel; neutral; gradual wavy boundary.
- C2—28 to 58 inches; brown (10YR 5/3) coarse sand; single grain; loose; common very fine roots; 2 percent gravel; neutral; gradual wavy boundary.
- C3—58 to 73 inches; pale brown (10YR 6/3) sand; single grain; loose; neutral; gradual wavy boundary.
- C4—73 to 80 inches; pale brown (10YR 6/3) coarse sand; single grain; loose; 1 percent gravel; neutral.

Range in Characteristics

Depth to carbonates: More than 60 inches

A horizon:

Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—loamy sand
Content of rock fragments—0 to 5 percent

E horizon:

Hue—10YR
Value—3 to 5
Chroma—3 or 4
Texture—sand, loamy sand, or loamy coarse sand
Content of rock fragments—0 to 5 percent

Bt horizon:

Hue—7.5YR or 10YR
Value—4
Chroma—3 or 4
Texture—loamy sand or loamy coarse sand
Content of rock fragments—0 to 5 percent

C horizon:

Hue—10YR
Value—4 to 6
Chroma—3 or 4
Texture—sand or coarse sand
Content of rock fragments—2 to 15 percent

1399B—Two Inlets loamy sand, noncalcareous substratum, 0 to 6 percent slopes

Component Descriptions

Two Inlets and similar soils

Extent: 85 percent of the unit
Geomorphic description: Beach ridges
Position on the landform: Shoulders, summits
Slope range: 0 to 6 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Beach deposits
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.0 inches
Content of organic matter in the upper 10 inches: 0.3 percent

Wurtsmith and similar soils

Extent: 6 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)
Ponding: None
Available water capacity to a depth of 60 inches: 4.6 inches
Content of organic matter in the upper 10 inches: 0.8 percent

Zimmerman and similar soils

Extent: 6 percent of the unit
Geomorphic description: Beach ridges
Position on the landform: Shoulders, summits
Slope range: 1 to 6 percent
Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Meehan and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.4 inches

Content of organic matter in the upper 10 inches: 1.4 percent

Management

Major uses: Forest land and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Ulen Series

Drainage class: Moderately well drained

Permeability: Rapid

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 3 percent

Taxonomic classification: Sandy, mixed, frigid Aeric Calciaquolls

Typical Pedon

Ulen fine sandy loam, 200 feet south and 850 feet west of the northeast corner of sec. 25, T. 162 N., R. 39 W.

Ap—0 to 10 inches; black (10YR 2/1) fine sandy loam, very dark gray (10YR 3/1) dry; weak medium subangular blocky structure parting to weak fine subangular blocky; very friable; few fine roots; slightly effervescent; slightly alkaline; neutral; clear smooth boundary.

Bk—10 to 16 inches; gray (10YR 5/1) fine sandy loam; weak medium subangular blocky structure parting to weak fine subangular blocky; friable; few fine roots; many distinct light gray (10YR 7/1) carbonate coats on faces of peds and in pores; violently effervescent; 2 percent gravel; moderately alkaline; clear smooth boundary.

C1—16 to 27 inches; light yellowish brown (2.5Y 6/4) fine sand; many medium distinct olive yellow (2.5Y 6/6) and few fine prominent dark yellowish brown (10YR 4/6) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; gradual wavy boundary.

C2—27 to 36 inches; light yellowish brown (2.5Y 6/4) fine sand; many medium distinct olive yellow (2.5Y 6/8) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; clear wavy boundary.

C3—36 to 50 inches; light brownish gray (2.5Y 6/2) fine sand; common medium distinct olive yellow (2.5Y 6/8) and few medium prominent brownish yellow (10YR 6/8) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; gradual wavy boundary.

C4—50 to 67 inches; light brownish gray (2.5Y 6/2) fine sand; common medium distinct olive yellow (2.5Y 6/6) iron concentrations; single grain; loose; slightly effervescent; slightly alkaline; gradual wavy boundary.

2Cg—67 to 80 inches; light olive gray (5Y 6/2) very fine sandy loam; common medium distinct light olive brown (2.5Y 5/6) and common fine prominent olive yellow (2.5Y 6/8) iron concentrations; weak thin platy structure; friable; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 8 to 18 inches

Other features: Some pedons have a 2C horizon below a depth of 40 inches. This horizon is very fine sandy loam or silt loam.

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—fine sandy loam

Bk horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—1 or 2

Texture—fine sandy loam, loamy fine sand, or loamy sand

C horizon:

Hue—10YR, 2.5Y, or 5Y

Value—5 or 6

Chroma—2 to 6

Texture—fine sand

64—Ulen fine sandy loam, 0 to 3 percent slopes

Component Descriptions

Ulen and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 5.1 inches

Content of organic matter in the upper 10 inches: 3.5 percent

Rosewood and similar soils

Extent: 10 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 5.5 percent

Redby and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Rushlake and similar soils

Extent: 2 percent of the unit

Geomorphic description: Rises on beach plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 3.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.0 inches

Content of organic matter in the upper 10 inches: 1.9 percent

Management

Major uses: Cropland and hayland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Wabanica Series

Drainage class: Poorly drained and very poorly drained

Permeability: Moderate

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, calcareous, frigid Typic Endoaquolls

Typical Pedon

Wabanica silt loam, 400 feet north and 400 feet east of the southwest corner of sec. 3, T. 162 N., R. 35 W.

Ap—0 to 8 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak fine and medium subangular blocky structure; very friable; slightly effervescent; slightly alkaline; abrupt smooth boundary.

Bg—8 to 19 inches; dark grayish brown (2.5Y 4/2) silt loam; few fine faint light olive brown (2.5Y 5/4) and few fine faint olive brown (2.5Y 4/4) iron concentrations; weak medium subangular blocky structure; friable; strongly effervescent; slightly alkaline; clear smooth boundary.

Cg1—19 to 52 inches; grayish brown (2.5Y 5/2) silt loam with bands of olive brown (2.5Y 4/3) clay $\frac{1}{16}$ to $\frac{1}{4}$ inch thick; common faint olive gray (5Y 5/2) iron depletions and common prominent yellowish brown (10YR 5/6) iron concentrations; massive; firm; very few fine prominent black (N 2/0) manganese nodules; strongly effervescent; slightly alkaline; clear wavy boundary.

Cg2—52 to 70 inches; light brownish gray (2.5Y 6/2) silt loam with bands of olive brown (2.5Y 4/3) clay $\frac{1}{16}$ to $\frac{1}{4}$ inch thick; common medium prominent yellowish brown (10YR 5/6) iron concentrations; massive; firm; strongly effervescent; slightly alkaline; clear wavy boundary.

Cg3—70 to 80 inches; light brownish gray (2.5Y 6/2) silt loam stratified with bands of olive gray (5Y 4/2) and dark gray (5Y 4/1) clay $\frac{1}{4}$ to $\frac{1}{2}$ inch thick; few fine distinct olive (5Y 5/3) and common medium prominent dark yellowish brown (10YR 4/6) iron

concentrations; massive; very firm; few prominent discontinuous light gray (2.5Y 7/2) carbonate coats on faces of peds; strongly effervescent; 1 percent gravel; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 14 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam or mucky silt loam

Bg horizon:

Hue—2.5Y or 5Y

Value—3 to 5

Chroma—1 or 2

Texture—silt loam or silty clay loam

Cg horizon:

Hue—2.5Y or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—silt loam, silty clay loam, or silt loam stratified with clay

Content of rock fragments—0 to 2 percent

569—Wabanica silt loam, 0 to 2 percent slopes

Component Descriptions

Wabanica and similar soils

Extent: 85 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silt loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, July, September, October, November)

Available water capacity to a depth of 60 inches: 12.0 inches

Content of organic matter in the upper 10 inches: 2.5 percent

Warroad and similar soils

Extent: 6 percent of the unit
Geomorphic description: Swales on lake plains; flats on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 4.1 feet (August)
Ponding does not occur (months): January, February, March, July, August, September, December
Ponding is deepest (depth, months): 0.3 foot (April, May)
Available water capacity to a depth of 60 inches: 9.7 inches
Content of organic matter in the upper 10 inches: 3.5 percent

Sax and similar soils

Extent: 4 percent of the unit
Geomorphic description: Depressions on lake plains
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic materials over glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February)
Ponding is shallowest (depth, months): 0.3 foot (July, August, September)
Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)
Available water capacity to a depth of 60 inches: 14.5 inches
Content of organic matter in the upper 10 inches: 47.5 percent

Grano and similar soils

Extent: 3 percent of the unit
Geomorphic description: Swales on lake plains; flats on lake plains
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine deposits
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (April)
Wet soil moisture status is lowest (depth, months): 3.0 feet (August)
Ponding does not occur (months): January, February, March, December
Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)
Available water capacity to a depth of 60 inches: 9.7 inches
Content of organic matter in the upper 10 inches: 3.5 percent

Enstrom and similar soils

Extent: 2 percent of the unit
Geomorphic description: Rises on lake plains
Slope range: 0 to 3 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine deposits over till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)
Ponding: None
Available water capacity to a depth of 60 inches: 8.1 inches
Content of organic matter in the upper 10 inches: 1.5 percent

Management

Major uses: Cropland

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section
- "Recreation" section

- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Warroad Series

Drainage class: Poorly drained

Permeability: Upper part—moderately rapid or rapid;
lower part—moderately slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Sandy over loamy, mixed,
superactive, frigid Typic Epiaquolls

Typical Pedon

Warroad fine sandy loam, 1,900 feet north and 1,900 feet west of the southeast corner of sec. 17, T. 162 N., R. 35 W.

Ap—0 to 7 inches; black (10YR 2/1) fine sandy loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure; very friable; strongly effervescent; moderately alkaline; clear smooth boundary.

A—7 to 11 inches; black (10YR 2/1) fine sandy loam, very dark gray (10YR 3/1) dry; weak medium subangular blocky structure; very friable; strongly effervescent; moderately alkaline; clear smooth boundary.

Bg—11 to 14 inches; dark grayish brown (2.5Y 4/2) loamy fine sand; few medium distinct olive brown (2.5Y 4/4) iron concentrations; weak fine subangular blocky structure; very friable; slightly alkaline; clear smooth boundary.

Cg1—14 to 21 inches; grayish brown (2.5Y 5/2) fine sand; few fine prominent dark yellowish brown (10YR 4/6) and common medium distinct light olive brown (2.5Y 5/6) iron concentrations; few fine prominent black (N 2/0) manganese nodules; single grain; loose; slightly alkaline; clear wavy boundary.

Cg2—21 to 26 inches; grayish brown (2.5Y 5/2) fine sand; few medium faint dark grayish brown (2.5Y 4/2) iron depletions and common medium distinct light olive brown (2.5Y 5/6) iron concentrations; single grain; loose; slightly alkaline; clear wavy boundary.

2Cg3—26 to 80 inches; grayish brown (2.5Y 5/2) silt loam with varves of very dark grayish brown (2.5Y 3/2) clay $\frac{1}{16}$ to $\frac{1}{8}$ inch thick; common medium distinct light olive brown (2.5Y 5/6) and common medium prominent strong brown (7.5YR 5/6) iron concentrations; weak thick and medium platy soil

fragments; friable; strongly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: 20 to 40 inches

Thickness of the mollic epipedon: 7 to 13 inches

Ap or A horizon:

Hue—10YR or N

Value—2 or 3

Chroma—0 to 2

Texture—fine sandy loam

Bg horizon:

Hue—10YR or 2.5Y

Value—3 to 6

Chroma—1 or 2

Texture—fine sand, loamy fine sand, or sandy loam

Cg horizon:

Hue—2.5Y

Value—4 to 6

Chroma—2 or 3

Texture—fine sand, loamy fine sand, or very fine sand

Content of rock fragments—0 to 5 percent

2Cg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—3 to 6

Chroma—1 or 2

Texture—very fine sandy loam, silt loam, or silty clay loam or clay stratified with very fine sandy loam, silt loam, or silty clay loam

1182—Warroad fine sandy loam, 0 to 2 percent slopes

Component Descriptions

Warroad and similar soils

Extent: 85 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months):
0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.1 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 9.7 inches

Content of organic matter in the upper 10 inches: 3.5 percent

Wabanica and similar soils

Extent: 7 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Silt loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, July, September, October, November)

Available water capacity to a depth of 60 inches: 12.0 inches

Content of organic matter in the upper 10 inches: 2.5 percent

Enstrom and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 8.1 inches

Content of organic matter in the upper 10 inches: 1.5 percent

Sax and similar soils

Extent: 3 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 14.5 inches

Content of organic matter in the upper 10 inches: 47.5 percent

Management

Major uses: Cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

W—Water

Component Descriptions

Water

Extent: 100 percent of the unit

Definition: Naturally occurring basins of surface water

1356—Water, miscellaneous

Component Descriptions

Water, miscellaneous

Extent: 100 percent of the unit

Definition: Small manmade areas that are used for industrial, sanitary, or mining applications and that contain water most of the year

Wheatville Series

Drainage class: Moderately well drained

Permeability: Upper part—moderately rapid; lower part—slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Coarse-silty over clayey, mixed over smectitic, superactive, frigid Aeric Calciaquolls

Typical Pedon

Wheatville loam, 600 feet north and 2,400 feet west of the southeast corner of sec. 5, T. 161 N., R. 37 W.

Ap—0 to 8 inches; black (10YR 2/1) loam, black (10YR 2/1) dry; weak fine subangular blocky structure; very friable; slightly effervescent; slightly alkaline; abrupt smooth boundary.

A—8 to 12 inches; black (10YR 2/1) very fine sandy loam; weak very fine subangular blocky structure; very friable; slightly effervescent; slightly alkaline; clear wavy boundary.

Bk1—12 to 16 inches; grayish brown (2.5Y 5/2) very fine sandy loam; weak thin platy structure parting to weak very fine subangular blocky; very friable; strongly effervescent; slightly alkaline; clear smooth boundary.

Bk2—16 to 27 inches; light olive brown (2.5Y 5/3) very fine sandy loam; common fine distinct light olive brown (2.5Y 5/6) iron concentrations; weak fine subangular blocky structure; very friable; strongly effervescent; moderately alkaline; clear smooth boundary.

C—27 to 35 inches; light yellowish brown (2.5Y 6/3) very fine sandy loam; many fine and medium distinct light olive brown (2.5Y 5/6) iron concentrations; massive; very friable; slightly effervescent; moderately alkaline; clear smooth boundary.

2Cg1—35 to 55 inches; dark grayish brown (2.5Y 4/2) clay with strata of grayish brown (2.5Y 5/2) very fine sandy loam $\frac{1}{16}$ to $\frac{1}{4}$ inch thick; many fine distinct light olive brown (2.5Y 5/6) and common fine distinct olive brown (2.5Y 4/4) iron concentrations; massive; firm; slightly to strongly effervescent; moderately alkaline; gradual smooth boundary.

2Cg2—55 to 80 inches; olive brown (2.5Y 4/3) clay with strata of grayish brown (2.5Y 5/2) silt loam and silty clay loam $\frac{1}{16}$ to $\frac{1}{4}$ inch thick; common medium prominent dark yellowish brown (10YR 4/6) and common fine faint olive brown (2.5Y 4/4) iron concentrations and few fine prominent very

dark gray (N 3/0) iron depletions; massive; firm; slightly to strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 9 to 12 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1

Texture—loam

Bk horizon:

Hue—2.5Y or 10YR

Value—4 to 6

Chroma—1 to 3

Texture—very fine sandy loam or silt loam

C horizon:

Hue—2.5Y or 10YR

Value—5 or 6

Chroma—3 or 4

Texture—very fine sandy loam or silt loam

2C horizon:

Hue—2.5Y

Value—4 or 5

Chroma—2 or 3

Texture—clay or clay stratified with very fine sandy loam, silt loam, or silty clay loam

1316—Wheatville loam, 0 to 2 percent slopes

Component Descriptions

Wheatville and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April, May)

Wet soil moisture status is lowest (depth, months): 6.7 feet (transitory) (August)

Ponding: None

Available water capacity to a depth of 60 inches: 9.5 inches

Content of organic matter in the upper 10 inches: 5.0 percent

Augsburg and similar soils

Extent: 13 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, September, October, November)

Available water capacity to a depth of 60 inches: 10.5 inches

Content of organic matter in the upper 10 inches: 4.8 percent

Grano and similar soils

Extent: 2 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.7 inches

Content of organic matter in the upper 10 inches: 3.5 percent

Management

Major uses: Cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Wildwood Series

Drainage class: Very poorly drained

Permeability: Slow

Landform: Lake plains

Parent material: Organic materials over glaciolacustrine deposits

Slope range: 0 to 1 percent

Taxonomic classification: Very fine, smectitic, nonacid, frigid Histic Humaquepts

Typical Pedon

Wildwood muck, 800 feet north and 700 feet east of the southwest corner of sec. 28, T. 163 N., R. 37 W.

Oa1—0 to 7 inches; muck, black (N 2/0) broken face and rubbed; weak very fine subangular blocky structure parting to weak very fine granular; very friable; many very fine to coarse roots; moderately acid; clear wavy boundary.

Oa2—7 to 12 inches; muck, black (N 2/0) broken face and rubbed; weak fine subangular blocky structure; very friable; common medium and coarse roots and many very fine and fine roots; slightly acid; clear smooth boundary.

A—12 to 15 inches; very dark gray (5Y 3/1) clay; common fine faint very dark grayish brown (2.5Y 3/2) iron depletions; weak fine and medium subangular blocky structure; firm; neutral; clear smooth boundary.

Bg—15 to 33 inches; dark olive gray (5Y 3/2) clay; common fine distinct olive brown (2.5Y 4/4) and few fine prominent dark yellowish brown (10YR 4/4) iron concentrations and common fine distinct very dark gray (N 3/0) iron and manganese depletions; weak medium subangular blocky structure; firm; neutral; clear wavy boundary.

Cg1—33 to 44 inches; dark gray (5Y 4/1) clay; common medium faint olive gray (5Y 4/2) iron depletions and few fine prominent olive brown (2.5Y 4/4) iron concentrations; massive; very firm; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cg2—44 to 80 inches; dark gray (5Y 4/1) clay; common fine faint dark gray (5Y 4/1) and common medium faint olive gray (5Y 4/2) iron depletions and few fine prominent dark yellowish brown (10YR 4/6) iron concentrations; massive; very firm;

common medium rounded white (5Y 8/1) soft masses of lime on ped interiors; strongly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: 18 to 33 inches

Thickness of the organic material: 8 to 16 inches

Oa horizon:

Hue—10YR or N

Value—2

Chroma—0 to 2

Texture—muck

A horizon:

Hue—10YR, 2.5Y, 5Y, or N

Value—2 or 3

Chroma—0 or 1

Texture—clay or silty clay

Bg horizon:

Hue—5Y

Value—3 or 4

Chroma—1 or 2

Texture—clay or silty clay

Cg horizon:

Hue—2.5Y or 5Y

Value—3 to 6

Chroma—1 or 2

Texture—clay or silty clay

630—Wildwood muck, 0 to 1 percent slopes

Component Descriptions

Wildwood and similar soils

Extent: 90 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 62.0 percent

Boash and similar soils

Extent: 4 percent of the unit

Geomorphic description: Swales on lake plains; flats on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Clay loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits over till

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (April)

Wet soil moisture status is lowest (depth, months): 3.0 feet (August)

Ponding does not occur (months): January, February, March, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June, November)

Available water capacity to a depth of 60 inches: 9.6 inches

Content of organic matter in the upper 10 inches: 4.3 percent

Dora and similar soils

Extent: 4 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)

Wet soil moisture status is lowest (depth, months): 2.1 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (January, February, July, August, September, October, November, December)

Ponding is deepest (depth, months): 0.5 foot (March, April, May, June)

Available water capacity to a depth of 60 inches: 18.3 inches

Content of organic matter in the upper 10 inches: 55.5 percent

Espelie and similar soils

Extent: 2 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 7.7 inches

Content of organic matter in the upper 10 inches: 3.0 percent

Management

Major uses: Wildlife habitat and pasture

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Woodslake Series

Drainage class: Very poorly drained

Permeability: Very slow

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 1 percent

Taxonomic classification: Very fine, smectitic, frigid Vertic Epiaquolls

Typical Pedon

Woodslake clay, 2,300 feet north and 100 feet east of the southwest corner of sec. 1, T. 162 N., R. 36 W.

Ap—0 to 8 inches; black (N 2/0) clay, very dark gray (N 3/0) dry; weak fine granular structure; friable; common very fine and fine roots; slightly alkaline; clear smooth boundary.

Bg1—8 to 15 inches; dark gray (5Y 4/1) clay; common medium prominent olive brown (2.5Y 4/3) iron concentrations; weak medium and coarse subangular blocky structure; firm; few very fine roots; slightly alkaline; gradual smooth boundary.

Bg2—15 to 21 inches; olive gray (5Y 4/2) clay; common fine prominent olive brown (2.5Y 4/4) iron concentrations and common fine and medium faint very dark gray (5Y 3/1) iron depletions; weak coarse subangular blocky structure; firm; few very fine roots; slightly alkaline; gradual smooth boundary.

Cg1—21 to 36 inches; dark olive gray (5Y 3/2) and dark gray (5Y 4/1) clay; common fine faint olive gray (5Y 4/2) iron depletions; massive; very firm; common medium prominent white (5Y 8/1) soft masses of lime between peds; strongly effervescent; slightly alkaline; gradual wavy boundary.

Cg2—36 to 63 inches; stratified dark olive gray (5Y 3/2) clay and grayish brown (2.5Y 5/2) silt loam; few fine and medium prominent dark yellowish brown (10YR 4/6) iron concentrations; weak medium and thick platy soil fragments; very firm; common medium rounded white (5Y 8/1) soft masses of lime between plates; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cg3—63 to 80 inches; stratified dark grayish brown (2.5Y 4/2) clay and grayish brown (2.5Y 5/2) silt loam; common medium prominent dark yellowish brown (10YR 4/6) iron concentrations; weak thick platy soil fragments; very firm; few fine and medium rounded white (2.5Y 8/1) soft masses of lime between plates; moderately alkaline.

Range in Characteristics

Depth to carbonates: 18 to 21 inches

Thickness of the mollic epipedon: 7 to 9 inches

Ap or A horizon:

Hue—10YR or N

Value—2

Chroma—0 or 1

Texture—clay

Bg horizon:

Hue—2.5Y or 5Y

Value—3 or 4

Chroma—1 or 2

Texture—clay

Cg horizon:

Hue—2.5Y or 5Y

Value—3 to 5

Chroma—1 or 2

Texture—clay or clay stratified with silt loam and silt clay loam

755—Woodslake clay, 0 to 1 percent slopes***Component Descriptions*****Woodslake and similar soils***Extent:* 85 percent of the unit*Geomorphic description:* Depressions on lake plains*Slope range:* 0 to 1 percent*Texture of the surface layer:* Clay*Depth to restrictive feature:* Very deep (more than 60 inches)*Drainage class:* Very poorly drained*Parent material:* Glaciolacustrine deposits*Flooding:* None*Wet soil moisture status is highest (depth, months):* At the surface (March, April, May)*Wet soil moisture status is lowest (depth, months):* 1.6 feet (February, August)*Ponding depth:* 0.5 foot all year*Available water capacity to a depth of 60 inches:* 7.9 inches*Content of organic matter in the upper 10 inches:* 3.4 percent**Boash and similar soils***Extent:* 8 percent of the unit*Geomorphic description:* Swales on lake plains; flats on lake plains*Slope range:* 0 to 2 percent*Texture of the surface layer:* Clay loam*Depth to restrictive feature:* Very deep (more than 60 inches)*Drainage class:* Poorly drained*Parent material:* Glaciolacustrine deposits over till*Flooding:* None*Wet soil moisture status is highest (depth, months):* At the surface (April)*Wet soil moisture status is lowest (depth, months):* 3.0 feet (August)*Ponding does not occur (months):* January, February, March, December*Ponding is deepest (depth, months):* 0.3 foot (April, May, June, November)*Available water capacity to a depth of 60 inches:* 9.6 inches*Content of organic matter in the upper 10 inches:* 4.3 percent**Wildwood and similar soils***Extent:* 5 percent of the unit*Geomorphic description:* Depressions on lake plains*Slope range:* 0 to 1 percent*Texture of the surface layer:* Muck*Depth to restrictive feature:* Very deep (more than 60 inches)*Drainage class:* Very poorly drained*Parent material:* Organic materials over glaciolacustrine deposits*Flooding:* None*Wet soil moisture status is highest (depth, months):* At the surface (March, April, May)*Wet soil moisture status is lowest (depth, months):* 2.5 feet (February)*Ponding is shallowest (depth, months):* 0.3 foot (July, August, September)*Ponding is deepest (depth, months):* 0.5 foot (January, February, March, April, May, June, October, November, December)*Available water capacity to a depth of 60 inches:* 5.7 inches*Content of organic matter in the upper 10 inches:* 62.0 percent**Dora and similar soils***Extent:* 2 percent of the unit*Geomorphic description:* Depressions on lake plains*Slope range:* 0 to 1 percent*Texture of the surface layer:* Muck*Depth to restrictive feature:* Very deep (more than 60 inches)*Drainage class:* Very poorly drained*Parent material:* Organic materials over glaciolacustrine deposits*Flooding:* None*Wet soil moisture status is highest (depth, months):* At the surface (March, April, May, June)*Wet soil moisture status is lowest (depth, months):* 2.1 feet (February)*Ponding is shallowest (depth, months):* 0.3 foot (January, February, July, August, September, October, November, December)*Ponding is deepest (depth, months):* 0.5 foot (March, April, May, June)*Available water capacity to a depth of 60 inches:* 18.3 inches*Content of organic matter in the upper 10 inches:* 55.5 percent

Management

Major uses: Pasture and wildlife habitat

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Wurtsmith Series

Drainage class: Moderately well drained

Permeability: Rapid

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 3 percent

Taxonomic classification: Mixed, frigid Oxyaquic Udipsamments

Typical Pedon

Wurtsmith loamy sand, 2,100 feet north and 2,500 feet west of the southeast corner of sec. 12, T. 160 N., R. 38 W.

A—0 to 3 inches; black (10YR 2/1) loamy sand, very dark gray (10YR 3/1) dry; weak medium subangular blocky structure; very friable; common very fine roots; slightly acid; clear smooth boundary.

E—3 to 5 inches; dark grayish brown (10YR 4/2) loamy sand; single grain; loose; few very fine roots; 1 percent gravel; slightly acid; clear smooth boundary.

Bw1—5 to 15 inches; dark yellowish brown (10YR 4/4) sand; single grain; loose; 1 percent gravel; slightly acid; gradual wavy boundary.

Bw2—15 to 30 inches; yellowish brown (10YR 5/4) sand; single grain; loose; 1 percent gravel; slightly acid; gradual wavy boundary.

BC—30 to 45 inches; yellowish brown (10YR 5/4) sand; many fine and medium prominent brown or dark brown (7.5YR 4/4) iron concentrations; single grain; loose; 2 percent gravel; slightly acid; gradual wavy boundary.

C1—45 to 60 inches; light brownish gray (10YR 6/2) sand; common fine distinct yellowish brown (10YR 5/6) iron concentrations; single grain; loose; 1 percent gravel; slightly acid; gradual wavy boundary.

C2—60 to 76 inches; light olive brown (2.5Y 5/3) sand; common fine prominent yellowish brown (10YR

5/6) iron concentrations; single grain; loose; 8 percent gravel; neutral; gradual wavy boundary.
C3—76 to 80 inches; grayish brown (2.5Y 5/2) sand; common fine prominent yellowish brown (10YR 5/6) iron concentrations; single grain; loose; 10 percent gravel; slightly alkaline.

Range in Characteristics

Depth to carbonates: More than 60 inches

A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—loamy sand

Content of rock fragments—0 to 2 percent

E horizon:

Hue—10YR

Value—4 or 5

Chroma—2

Texture—loamy sand or sand

Content of rock fragments—0 to 2 percent

Bw horizon:

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—sand or coarse sand

Content of rock fragments—0 to 10 percent

BC horizon:

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—sand or coarse sand

Content of rock fragments—0 to 10 percent

C horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 4

Texture—sand or coarse sand

Content of rock fragments—0 to 10 percent

1444—Wurtsmith loamy sand, MAP 22-30, 0 to 3 percent slopes

Component Descriptions

Wurtsmith and similar soils

Extent: 85 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.6 inches

Content of organic matter in the upper 10 inches: 0.8 percent

Meehan and similar soils

Extent: 10 percent of the unit

Geomorphic description: Flats on lake plains; rises on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.4 inches

Content of organic matter in the upper 10 inches: 1.4 percent

Clearriver and similar soils

Extent: 2 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, backslopes

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Beach deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 3.0 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 3.5 inches

Content of organic matter in the upper 10 inches: 0.5 percent

Two Inlets and similar soils

Extent: 2 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits

Slope range: 0 to 6 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 3.0 inches

Content of organic matter in the upper 10 inches: 0.3 percent

Cormant and similar soils

Extent: 1 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 4.9 feet (August)

Ponding does not occur (months): January, February, March, July, August, September, November, December

Ponding is deepest (depth, months): 0.3 foot (April, May)

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 3.9 percent

Management

Major uses: Forest land and pasture

For general and detailed information about managing this map unit, see the following sections:

- "Agronomy" section
- "Forest Land" section

- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Zimmerman Series

Drainage class: Excessively drained

Permeability: Rapid

Landform: Beach ridges

Parent material: Beach deposits

Slope range: 1 to 6 percent

Taxonomic classification: Mixed, frigid Argic
Udipsamments

Typical Pedon

Zimmerman fine sand (fig. 12), 1,350 feet north and 1,600 feet west of the southeast corner of sec. 27, T. 161 N., R. 37 W.

A—0 to 2 inches; very dark grayish brown (10YR 3/2) fine sand; weak very fine subangular blocky structure parting to weak very fine and fine granular; very friable; common very fine and fine and few medium and coarse roots; moderately acid; clear smooth boundary.

E—2 to 6 inches; brown (10YR 4/3) fine sand; weak fine subangular blocky structure; very friable; common very fine and fine and few medium and coarse roots; slightly acid; clear smooth boundary.

Bw1—6 to 11 inches; dark yellowish brown (10YR 4/4) fine sand; weak fine and medium subangular blocky structure; very friable; few fine and medium roots; slightly acid; clear wavy boundary.

Bw2—11 to 17 inches; yellowish brown (10YR 5/4) fine sand; weak medium subangular blocky structure; very friable; few fine and medium roots; slightly acid; gradual wavy boundary.

E' & Bt1—17 to 51 inches; light yellowish brown (10YR 6/4) fine sand (E'); single grain; loose; few irregular discontinuous very weakly cemented bands of dark brown (7.5YR 4/4) loamy fine sand $\frac{1}{16}$ to $\frac{1}{4}$ inch thick (Bt); 1 percent gravel; neutral; gradual wavy boundary.

E' & Bt2—51 to 66 inches; brown (10YR 5/3) fine sand (E'); single grain; loose; few irregular discontinuous very weakly cemented bands of dark brown (7.5YR 4/4) loamy fine sand $\frac{1}{16}$ to $\frac{1}{4}$ inch thick (Bt); total thickness of the bands is $1\frac{1}{2}$ inches; 3 percent gravel and 2 percent cobbles; neutral; gradual wavy boundary.

C—66 to 80 inches; pale brown (10YR 6/3) fine sand; single grain; loose; neutral.

Range in Characteristics

Depth to carbonates: More than 60 inches

A horizon:

Hue—10YR

Value—3

Chroma—1 or 2

Texture—fine sand

E horizon:

Hue—10YR

Value—4 to 6

Chroma—2 to 4

Texture—fine sand or loamy fine sand

Content of rock fragments—0 to 1 percent

Bw horizon:

Hue—10YR

Value—4 or 5

Chroma—3 to 6

Texture—fine sand

Content of rock fragments—0 to 5 percent

E' part of E' & Bt horizon:

Hue—10YR

Value—4 to 6

Chroma—2 to 4

Texture—fine sand or loamy fine sand

Content of rock fragments—0 to 1 percent

Bt part of E' & Bt horizon:

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—4 to 6

Texture—fine sand or loamy fine sand

Content of rock fragments—0 to 1 percent

C horizon:

Hue—10YR

Value—6

Chroma—3

Texture—fine sand or sand

Content of rock fragments—0 to 5 percent

158B—Zimmerman fine sand, 1 to 6 percent slopes

Component Descriptions

Zimmerman and similar soils

Extent: 85 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Hiwood and similar soils

Extent: 6 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 1 to 6 percent

Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.7 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Two Inlets and similar soils

Extent: 6 percent of the unit

Geomorphic description: Beach ridges

Position on the landform: Shoulders, summits

Slope range: 0 to 6 percent

Texture of the surface layer: Loamy sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material: Beach deposits

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 3.0 inches

Content of organic matter in the upper 10 inches: 0.3 percent

Redby and similar soils

Extent: 3 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 3 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 1.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August)

Ponding: None

Available water capacity to a depth of 60 inches: 4.8 inches

Content of organic matter in the upper 10 inches: 0.6 percent

Management

Major uses: Forest land

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Forest Land” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Zippel Series

Drainage class: Poorly drained

Permeability: Moderately rapid

Landform: Lake plains

Parent material: Glaciolacustrine deposits

Slope range: 0 to 2 percent

Taxonomic classification: Coarse-silty, mixed, superactive, calcareous, frigid Typic Endoaquolls

Typical Pedon

Zippel very fine sandy loam, 300 feet south and 600 feet east of the northwest corner of sec. 20, T. 163 N., R. 36 W.

Ap—0 to 10 inches; black (10YR 2/1) very fine sandy loam, very dark gray (10YR 3/1) dry; weak fine and medium subangular blocky structure; very friable; many very fine and fine roots; slightly alkaline; abrupt smooth boundary.

Bg—10 to 16 inches; grayish brown (2.5Y 5/2) very fine sandy loam; common fine distinct light olive brown (2.5Y 5/4) iron concentrations; weak fine and medium subangular blocky structure; very

friable; many very fine roots; strongly effervescent; slightly alkaline; clear smooth boundary.

Cg1—16 to 30 inches; light brownish gray (2.5Y 6/2), stratified very fine sandy loam and very fine sand; few fine prominent yellowish brown (10YR 5/6) and common fine distinct light olive brown (2.5Y 5/4) iron concentrations; weak thick platy soil fragments; very friable; common very fine and fine roots; few fine and medium rounded light gray (2.5Y 7/2) soft masses of carbonate between peds; strongly effervescent; moderately alkaline; clear wavy boundary.

Cg2—30 to 52 inches; light brownish gray (2.5Y 6/2) and grayish brown (2.5Y 5/2), stratified very fine sandy loam, very fine sand, and silt loam; common fine and medium distinct light olive brown (2.5Y 5/4) and common fine and medium prominent dark yellowish brown (10YR 4/6) iron concentrations; weak thick platy soil fragments; very friable; common fine and medium rounded light gray (2.5Y 7/2) soft masses of carbonate between peds; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cg3—52 to 80 inches; light brownish gray (2.5Y 6/2) and grayish brown (2.5Y 5/2), stratified very fine sandy loam, very fine sand, and silt loam; common medium and coarse prominent dark yellowish brown (10YR 4/6), few medium prominent dark brown (7.5YR 3/4), and common medium and coarse distinct light olive brown (2.5Y 5/4) iron concentrations; weak medium and thick platy soil fragments; very friable; few fine rounded black (N 2/0) iron-manganese concretions and common fine and medium rounded light gray (2.5Y 7/2) soft masses of carbonate between peds; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 0 to 10 inches

Thickness of the mollic epipedon: 7 to 10 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—very fine sandy loam

Bg horizon:

Hue—2.5Y

Value—3 to 5

Chroma—2

Texture—very fine sand, loamy very fine sand, very fine sandy loam, or silt loam

Cg horizon:

Hue—2.5Y or 5Y

Value—5 to 7

Chroma—2

Texture—very fine sand, loamy very fine sand, very fine sandy loam, silt loam, or stratified with these textures

568—Zippel very fine sandy loam, 0 to 2 percent slopes

Component Descriptions

Zippel and similar soils

Extent: 85 percent of the unit

Geomorphic description: Flats on lake plains; swales on lake plains

Slope range: 0 to 2 percent

Texture of the surface layer: Very fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 0.5 foot (April)

Wet soil moisture status is lowest (depth, months): 3.8 feet (August)

Ponding does not occur (months): January, February, March, July, August, December

Ponding is deepest (depth, months): 0.3 foot (April, May, June)

Available water capacity to a depth of 60 inches: 10.9 inches

Content of organic matter in the upper 10 inches: 4.0 percent

Augsburg, depressional, and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Mucky very fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 3.0 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September, October)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, November, December)

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 6.1 percent

Sago and similar soils

Extent: 5 percent of the unit

Geomorphic description: Depressions on lake plains

Slope range: 0 to 1 percent

Texture of the surface layer: Muck

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material: Organic materials over glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): At the surface (March, April, May)

Wet soil moisture status is lowest (depth, months): 2.5 feet (February)

Ponding is shallowest (depth, months): 0.3 foot (July, August, September)

Ponding is deepest (depth, months): 0.5 foot (January, February, March, April, May, June, October, November, December)

Available water capacity to a depth of 60 inches: 13.4 inches

Content of organic matter in the upper 10 inches: 72.5 percent

Skime and similar soils

Extent: 5 percent of the unit

Geomorphic description: Rises on lake plains

Slope range: 0 to 4 percent

Texture of the surface layer: Loamy fine sand

Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material: Glaciolacustrine deposits

Flooding: None

Wet soil moisture status is highest (depth, months): 2.5 feet (April)

Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August)

Ponding: None

Available water capacity to a depth of 60 inches: 5.1 inches

Content of organic matter in the upper 10 inches: 0.9 percent

Management

Major uses: Cropland

For general and detailed information about managing this map unit, see the following sections:

- “Agronomy” section
- “Recreation” section
- “Wildlife Habitat” section
- “Engineering” and “Soil Properties” sections

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Agronomy

Allan R. Gustafson, Jr., area resource conservationist, Natural Resources Conservation Service, assisted in the preparation of this section.

General management needed for crops and for hay and pasture is suggested in this section. The system

of land capability classification used by the Natural Resources Conservation Service is explained, the estimated yields of the main crops and hay and pasture plants are listed for each soil, and prime farmland is described.

Planners of management systems for individual fields or farms should consider obtaining specific information from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Of the nearly 650,000 acres of agricultural land in Roseau County, approximately 75 percent is utilized for crop production, 15 percent for hay production, and about 10 percent for pasture (Minnesota Agricultural Statistics Service, 1996). The principal small grain crops are wheat, barley, and oats. Canola, sunflowers, and flax are the main oilseed crops grown in the county. The acreage used for canola is increasing annually (fig. 13). Specialty crops are an important part of the county's agricultural industry. Bluegrass, timothy, and reed canarygrass are grown for seed production.

Various grasses and legumes are grown in the county. The poorly drained soils support moisture-tolerant grasses, such as creeping foxtail, timothy, and



Figure 13.—Canola growing in an area of Zippel very fine sandy loam, 0 to 2 percent slopes.

reed canarygrass, and legumes, such as birdsfoot trefoil, red clover, ladino clover, and alsike clover. The better drained soils support a wider range of species, including alfalfa, crown vetch, orchardgrass, and bluegrass, in addition to moisture-tolerant species.

An extensive network of judicial and private ditches has been installed to remove surface water and make agricultural production possible throughout most of the county. In most areas, however, wetness continues to be a major obstacle. Adequate drainage encourages good root development by allowing the free movement of air and water through the soil. Managing drainage in compliance with wetland regulations may require extra planning and special permits.

Wind erosion can be a problem throughout the county. Sandy soils, such as Hiwood soils, or soils that have a sandy mantle, such as Eckvoll and Enstrom soils, are very susceptible to soil blowing (fig. 14). Loss of the surface layer through erosion reduces productivity and results in the sedimentation of drainage ditches and streams. Most soil blowing occurs during fall and spring in areas where the ground is bare. Conservation tillage, field windbreaks, crop rotation, and crop residue management help to

control soil blowing. Leaving fields rough and cloddy in the fall can also reduce the hazard of soil blowing.

Tillage can control weeds and help to prepare a suitable seedbed. Good tilth increases the rate of water infiltration and provides a favorable seedbed. Frequent tillage can damage soil structure. Working the soil when it is too wet can result in compaction and thus can damage soil structure (fig. 15). Including alfalfa in the crop rotation and returning crop residue to the soil improve tilth. When a tillage system is selected, soil texture, drainage class, slope, and cropping history should be considered. Maintaining good tilth helps to maximize productivity and improves the longevity of the soil resource.

Good pasture management includes applying fertilizer, using a system of pasture rotation, deferring grazing during wet periods, using proper stocking rates, and controlling brush and weeds. Pasture can be improved by reseeding a more suitable or productive species. The type of soil and the drainage conditions should be considered when forage is selected for seeding.

Soil fertility varies across the county. Differences in vegetation and parent material are largely responsible for this variation (fig. 16). Fertilizer application should



Figure 14.—An area of Eckvoll loamy fine sand, 0 to 3 percent slopes. Using a system of minimum tillage and returning crop residue to the soil can improve the content of organic matter and reduce the hazard of soil blowing in areas of this soil. The lower lying, poorly drained Auganaush soil is in the darker areas.



Figure 15.—Tire ruts in an area of Boash clay loam, 0 to 2 percent slopes. A high content of clay makes this soil susceptible to compaction.

be based on the results of soil tests. The need for fertilizer depends on the type of soil, past management, and the nutrient demands of the crop to be grown.

Organic soils, such as Cathro, Tacoosh, and Sax soils, are quite extensive in the county. The thickness of the organic layer ranges from only about 8 inches to more than 10 feet, depending on the soil type. Organic soils that have been drained may be used for small grain crops but are more commonly used for specialty crops, such as bluegrass seed (fig. 17). Forage plants that can tolerate wetness can produce excellent yields in areas of these soils.

The western part of the county is dominated by Nereson, Percy, and Skagen soils. These soils formed in glacial till that has been only slightly altered by the waters of Glacial Lake Agassiz. A substantial amount of the surface in these areas is covered by rock fragments. The rocks are primarily cobble sized (3 to 10 inches). Many fields are picked and cleared on an

annual basis. Areas that are too cobbly, stony, or bouldery are used as permanent pasture.

Some of the better agricultural soils in the county formed in the silty lacustrine sediments of Glacial Lake Agassiz. Borup, Wabanica, and Zippel soils, for example, have favorable permeability and water-holding characteristics and can be easily worked. In areas where drainage is adequate, these types of soils can be very productive. Grano, Mustinka, and Boash soils formed in deep-water, clayey glaciolacustrine deposits and in clayey glaciolacustrine deposits over till. These soils are very fertile, but they are the last to dry out in the spring and can be difficult to work. Under the right weather conditions, these soils can be the most productive in the county.

Soils that formed in sandy and gravelly sediments are used mostly for pasture and hay production. Hiwood and Skime soils are examples. In the better drained areas, droughty conditions limit production



Figure 16.—An area of Percy loam, 0 to 2 percent slopes. Deep plowing has exposed the lighter colored subsoil, which has a very high content of lime. Lime affects soil pH and the availability of nutrients.

during the summer. These soils are sometimes cropped, but yields are generally low. In many areas these soils occur as small islands in larger fields of soils with heavier textures.

Some soils formed in a combination of ice and water deposits. Strandquist soils, for example, have a mantle of gravelly sand over loamy glacial till. About 20 percent of the soils in the county have layers of contrasting textures. Although the Strandquist soils are poorly drained, yields may be reduced if crops experience a water deficit during the summer after the water table drops.

Water erosion is not a major concern in the survey area. It can be a hazard in the gently sloping and moderately sloping areas of Baudette, Croke, and Garnes soils that are adjacent to the rivers.

Cropland Management Considerations

The management concerns affecting the use of the detailed soil map units in the survey area for crops are shown in table 6. The main concerns in managing nonirrigated cropland are conserving moisture, controlling wind erosion and water erosion, and maintaining soil fertility.

Conserving moisture consists primarily of reducing the evaporation and runoff rates and increasing the water infiltration rate. Applying conservation tillage and conservation cropping systems, farming on the contour, stripcropping, establishing field windbreaks,

and leaving crop residue on the surface conserve moisture.

Generally, a combination of several practices is needed to control *wind erosion* and *water erosion*. Conservation tillage, stripcropping, field windbreaks, contour farming, conservation cropping systems, crop residue management, terraces, diversions, and grassed waterways help to prevent excessive soil loss.

Measures that are effective in maintaining *soil fertility* include applying fertilizer, both organic and inorganic, including manure; incorporating crop residue or green manure crops into the soil; and using proper crop rotations. Controlling erosion helps to prevent the loss of organic matter and plant nutrients and thus helps to maintain productivity, although the level of fertility can be reduced even in areas where erosion is controlled. All soils used for nonirrigated crops respond well to applications of fertilizer.

Some of the considerations shown in the table cannot be easily overcome. These are *channels*, *flooding*, *gullies*, and *ponding*.

Additional considerations are as follows:

Lime content, limited available water capacity, potential poor tilth and compaction, and restricted permeability.—These limitations can be minimized by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; and using conservation cropping systems. Also, crops may respond well to additions of phosphate fertilizer to soils that have a high content of lime.

Potential for ground-water contamination.—The proper use of nutrients and pesticides can reduce the risk of ground-water contamination.



Figure 17.—Bluegrass harvest in an area of Tacoosh mucky peat, MAP 22-30, 0 to 1 percent slopes. Bluegrass is grown for seed on some of the peatland in the county.

Potential for surface-water contamination.—The risk of surface-water contamination can be reduced by the proper use of nutrients and pesticides and by conservation farming practices that reduce the runoff rate.

Surface crusting.—This limitation retards seedling development after periods of heavy rainfall.

Surface rock fragments.—This limitation causes rapid wear of tillage equipment. It cannot be easily overcome.

Surface stones.—Stones or boulders on or near the surface can hinder normal tillage unless they are removed.

Salt content.—In areas where this is a limitation, only salt-tolerant crops should be grown.

On irrigated soils the main management concerns are efficient water use, nutrient management, control of erosion, pest and weed control, and timely planting and harvesting for a successful crop. An irrigation system that provides optimum control and distribution of water at minimum cost is needed. Overirrigation wastes water, leaches plant nutrients, and causes erosion. Also, it can increase wetness and soil salinity.

Explanation of Criteria

Acid soil.—The pH is less than 6.1.

Channeled.—The word “channeled” is included in the map unit name.

Dense layer.—The bulk density is 1.80 g/cc or greater within the soil profile.

Depth to rock.—The depth to bedrock is less than 40 inches.

Eroded.—The word “eroded” is included in the map unit name.

Excessive permeability.—Saturated hydraulic conductivity is 42 micrometers per second or more within the soil profile.

Flooding.—Flooding is occasional, frequent, or very frequent.

Gullied.—The word “gullied” is included in the map unit name.

High content of organic matter.—The surface layer has more than 20 percent organic matter.

Lime content.—The pH is 7.4 or more in the surface layer, or the wind erodibility group is 4L.

Limited available water capacity.—The available water capacity calculated to a depth of 60 inches or to a root-limiting layer is 6 inches or less.

Limited content of organic matter.—The content of organic matter is 2 percent or less in the surface layer.

Ponding.—Ponding duration is assigned to the map unit component. Water is above the surface.

Potential poor tilth and compaction.—The content of clay is 27 percent or more in the surface layer.

Potential for ground-water contamination (by nutrients or pesticides).—The depth to a zone in which the soil moisture status is wet is 4 feet or less, the saturated hydraulic conductivity of any layer is more than 42 micrometers per second, or the depth to bedrock is less than 60 inches.

Potential for surface-water contamination (by nutrients or pesticides).—The map unit component is occasionally, frequently, or very frequently flooded, is subject to ponding, is assigned to hydrologic group C or D and has a slope of more than 2 percent, is assigned to hydrologic group A and has a slope of more than 6 percent, or is assigned to hydrologic group B, has a slope of 3 percent or more, and has a K factor of more than 0.17.

Restricted permeability.—Permeability is less than 0.42 micrometer per second within the soil profile.

Salt content.—The electrical conductivity is 4 or more in the surface layer or 8 or more within a depth of 30 inches.

Slope (equipment limitation).—The slope is more than 15 percent.

Surface crusting.—The content of clay is 27 percent or more and the content of organic matter is 2 percent or less in the surface layer.

Surface rock fragments (equipment limitation).—The terms describing the texture of the surface layer include any rock fragment modifier, except for gravelly, channery, stony, very stony, extremely stony, bouldery, very bouldery, and extremely bouldery.

Surface stones (equipment limitation).—The word “stony” or “bouldery” is included in the description of the surface layer, or 0.01 percent or more of the surface is covered by boulders.

Water erosion.—Either the slope is 6 percent or more, or the slope is more than 3 percent and less than 6 percent and the surface layer is not sandy.

Wet soil moisture status.—A zone in which the soil moisture status is wet is within 2.5 feet of the surface.

Wind erosion.—The wind erodibility group is 1, 2, 3, or 4L.

Crop Yield Estimates

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 7. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and

records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in the table are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Pasture and Hayland Interpretations

Under good management, proper grazing is essential for the production of high-quality forage, stand survival, and erosion control. Proper grazing helps plants to maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and renovation also are important management practices.

Pasture yield estimates are provided in table 8. Some of the yields are expressed as animal unit months (AUM), or the amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about forage yields other than those shown in table 8.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops.

Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for woodland or for engineering purposes.

In the capability system, soils generally are grouped at three levels—capability class, subclass, and unit (USDA, 1961). These categories indicate the degree and kinds of limitations affecting mechanized farming systems that produce the more commonly grown field crops, such as corn, small grain, cotton, hay, and field-grown vegetables. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use.

If properly managed, soils in classes 1, 2, 3, and 4 are suitable for the mechanized production of commonly grown field crops and for pasture and woodland. The degree of the soil limitations affecting the production of cultivated crops increases progressively from class 1 to class 4. The limitations can affect levels of production and the risk of permanent soil deterioration caused by erosion and other factors.

Soils in classes 5, 6, and 7 are generally not suited to the mechanized production of commonly grown field crops without special management, but they are suitable for plants that provide a permanent cover, such as grasses and trees. The severity of the soil limitations affecting crops increases progressively from class 5 to class 7.

Areas in class 8 are generally not suitable for crops, pasture, or woodland without a level of management that is impractical. These areas may have potential for other uses, such as recreational facilities and wildlife habitat.

Capability subclasses identify the dominant kind of limitation in the class. They are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, 2*e*. The letter *e* shows that the main hazard is the risk of erosion unless a close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial

drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

There are no subclasses in class 1 because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w*, *s*, or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use mainly to pasture, woodland, wildlife habitat, or recreation.

The capability classification of map units in the survey area is given in tables 7 and 8 at the end of this section.

Prime Farmland

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, State, and Federal levels, as well as individuals, must encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to food, feed, forage, fiber, and oilseed crops. Such soils have properties that favor the economic production of sustained high yields of crops. The soils need only to be treated and managed by acceptable farming methods. An adequate moisture supply and a sufficiently long growing season are required. Prime farmland soils produce the highest yields with minimal expenditure of energy and economic resources, and farming these soils results in the least damage to the environment.

Prime farmland soils may presently be used as cropland, pasture, or woodland or for other purposes. They either are used for food and fiber or are available for these uses. Urban or built-up land, public land, and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of land 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad yards, airports, sanitary landfills, sewage treatment plants, and water-control structures. Public land is land not available for farming in National forests, National parks, military reservations, and State parks.

Prime farmland soils commonly receive an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable, and the level of acidity or

alkalinity and the content of salts and sodium are acceptable. The soils have few, if any, rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods, and they are not frequently flooded during the growing season or are protected from flooding. Slopes range mainly from 0 to 6 percent.

Soils in which a saturated zone is high in the profile or soils that are subject to flooding may qualify as prime farmland where these limitations are overcome by drainage measures or flood control. Onsite evaluation is necessary to determine the effectiveness of corrective measures. More information about the criteria for prime farmland can be obtained at the local office of the Natural Resources Conservation Service.

A recent trend in land use has been the conversion of prime farmland to urban and industrial uses. The loss of prime farmland to other uses puts pressure on lands that are less productive than prime farmland.

About 292,000 acres, or nearly 27 percent of the survey area, meets the requirements for prime farmland.

The map units in the survey area that meet the requirements for prime farmland are listed in table 9. This list does not constitute a recommendation for a particular land use. On some soils included in the table, measures that overcome limitations are needed. The need for these measures is indicated in parentheses after the map unit name. The location of each map unit is shown on the detailed soil maps. The soil qualities that affect use and management are described in the section "Soil Series and Detailed Soil Map Units."

Erosion Factors

Soil erodibility (K) and soil-loss tolerance (T) factors are used in an equation that predicts the amount of soil lost through water erosion in areas of cropland. The procedure for predicting soil loss is useful in guiding the selection of soil and water conservation practices. The erosion factors are shown in table 24.

Soil Erodibility (K) Factor

The soil erodibility (K) factor indicates the susceptibility of a soil to sheet and rill erosion by water. The soil properties that influence erodibility are those that affect the infiltration rate, the movement of water through the soil, and the water storage capacity of the soil and those that allow the soil to resist dispersion, splashing, abrasion, and the transporting forces of rainfall and runoff. The most important soil properties are the content of silt plus very fine sand,

the content of sand coarser than very fine sand, the content of organic matter, soil structure, and permeability.

Fragment-Free Soil Erodibility (Kf) Factor

This is one of the factors used in the Revised Universal Soil Loss Equation. It shows the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Soil-Loss Tolerance (T) Factor

The soil-loss tolerance (T) factor is an estimate of the maximum annual rate of soil erosion that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons of soil loss per acre per year. Ratings of 1 to 5 are used, depending on soil properties and prior erosion. The criteria used in assigning a T factor to a soil include maintenance of an adequate rooting depth for crop production, potential reduction of crop yields, maintenance of water-control structures affected by sedimentation, prevention of gullyng, and the value of nutrients lost through erosion.

Wind Erodibility Groups

Wind erodibility is directly related to the percentage of dry, nonerodible surface soil aggregates larger than 0.84 millimeter in diameter. From this percentage, the wind erodibility index (I) factor is determined. This factor is an expression of the stability of the soil aggregates, or the extent to which they are broken down by tillage and the abrasion caused by windblown soil particles. Soils are assigned to wind erodibility groups (WEG) having similar percentages of dry soil aggregates larger than 0.84 millimeter. The wind erodibility groups and wind erodibility index factors are listed in table 24.

Additional information about wind erodibility groups and K, Kf, T, and I factors can be obtained from local offices of the Natural Resources Conservation Service or the Cooperative Extension Service.

Windbreaks and Environmental Plantings

Scott A. Johnson, district manager, Roseau County Conservation District, assisted in the preparation of this section.

Windbreaks can be effective in reducing the hazard of soil blowing in Roseau County. Species selection should be based on compatibility with soil type. Species survival and growth rates are variable and highly dependent on soil conditions and on weed control.

Windbreaks protect livestock, buildings, and yards

from wind and snow. They also protect fruit trees and gardens, and they furnish habitat for wildlife. Several rows of low- and high-growing broadleaf and coniferous trees and shrubs provide the most protection.

Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil. Field windbreaks protect cropland and crops from wind, help to keep snow on the fields, and provide food and cover for wildlife.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Windbreaks are often planted on land that did not originally support trees. Knowledge of how trees perform on such land can be gained only by observing and recording the performance of trees that have been planted and have survived. Many popular windbreak species are not indigenous to the areas in which they are planted.

Each tree or shrub species has certain climatic and physiographic limits. Within these parameters, a tree or shrub may grow well or grow poorly, depending on the characteristics of the soil. Each tree or shrub has definable potential heights in a given physiographic area and under a given climate. Accurate definitions of potential heights are necessary when a windbreak is planned and designed.

Table 10 shows the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates in this table are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from local offices of the Natural Resources Conservation Service or the Cooperative Extension Service or from a nursery.

Windbreak Suitability Groups

Windbreak suitability groups consist of soils in which the kinds and degrees of the hazards and limitations that affect the survival and growth of trees and shrubs in windbreaks are about the same. The windbreak suitability groups assigned to the soils in the survey area are listed in table 11. The groups are described in the following paragraphs.

Group 1 consists of soils that are somewhat poorly

drained or moderately well drained, are rapidly permeable to moderately slowly permeable, and do not have free carbonates in the upper 20 inches.

Group 1K consists of soils that are somewhat poorly drained or moderately well drained, are rapidly permeable to moderately slowly permeable, and have free carbonates within 20 inches of the surface. These soils may be very slightly saline or slightly saline (the electrical conductivity is 2 to 8).

Group 2 consists of poorly drained soils that have been artificially drained and do not have free carbonates in the upper 20 inches. Permeability varies.

Group 2K consists of poorly drained or very poorly drained soils that have been artificially drained and have free carbonates within 20 inches of the surface. Permeability varies. These soils may be very slightly saline or slightly saline (the electrical conductivity is 2 to 8).

Group 2H consists of very poorly drained soils that have been artificially drained and have more than 16 inches of organic material. Permeability varies.

Group 2W consists of very poorly drained soils that are subject to ponding and have been artificially drained. It includes soils that have an organic surface layer up to 16 inches thick. Permeability varies.

Group 3 consists of soils that are well drained or moderately well drained and are loamy or silty throughout. Permeability is moderate or moderately slow. These soils do not have free carbonates in the upper 20 inches.

Group 4 consists of soils that are well drained, moderately well drained, or somewhat poorly drained and have a silty or loamy surface layer and a clayey subsoil. Permeability is slow or very slow.

Group 4C consists of soils that are well drained, moderately well drained, or somewhat poorly drained and have a clayey surface layer and subsoil. Permeability is slow or very slow.

Group 4F consists of soils that are well drained, moderately well drained, or somewhat poorly drained and have a substratum of dense till. Permeability is slow or very slow.

Group 5 consists of soils that are excessively drained to moderately well drained and have a moderate available water capacity. These soils are dominantly fine sandy loam or sandy loam, but some are sandy in the upper part and loamy in the lower part.

Group 6G consists of excessively drained to moderately well drained soils that are loamy in the upper part and have sand or sand and gravel at a depth of 20 to 40 inches. These soils have a low or moderate available water capacity.

Group 6D consists of excessively drained to moderately well drained, loamy soils that have bedrock at a depth of 20 to 40 inches. These soils have a low or moderate available water capacity.

Group 7 consists of excessively drained to well drained soils that are dominantly loamy fine sand or coarser textured and are shallow to sand or to sand and gravel. These soils have a low available water capacity.

Group 8 consists of excessively drained to well drained, loamy soils that have free carbonates within 20 inches of the surface.

Group 9W consists of soils that are somewhat poorly drained, poorly drained, or very poorly drained and are moderately saline (the electrical conductivity is 8 to 16).

Group 10 consists of soils or miscellaneous areas that generally are not suitable for windbreaks. One or more characteristics, such as soil depth, texture, wetness, available water capacity, or slope, limit the planting, survival, or growth of trees and shrubs.

Forest Land

Bob Wennerstrand, Warroad area forester, Minnesota Department of Natural Resources, and Steve Johnson, Wannaska forestry technician, Minnesota Department of Natural Resources, assisted in the preparation of this section.

Roseau County is in a transition or tension zone between tall grass prairie to the west and northern mixed forest to the east. The soils in the county reflect the slow westward advancement of forest vegetation since the last ice age. Prior to permanent settlement, the county was heavily forested in the east, and the west supported aspen with fingers of prairie brushland and sedge meadows.

Wildfire helped to create this pattern. Rivers and streams were natural barriers to wildfire. They protected forests while allowing fire to maintain the prairie. Along with settlement came ditches, fields, pasture, roads, and the use of fire to clear agricultural land. Repeated frequent fire eliminated the conifer component and encouraged aspen. Part of the great marsh, north of the railroad between Roseau and Warroad, originally was tree-covered but is now open as a result of numerous fires sweeping over the area. Prairie vegetation, dependent on fire for sustenance, was also affected (Buell and Buell, 1959). In time, ditches, fields, and roads served as additional barriers to wildfire. As a result of improved drainage and a lower incidence of wildfire, aspen encroachment into the brushland and grassland prairie intensified.

About 220,000 acres in Roseau County is forested. About 34 percent of the forest land is privately owned,

and 66 percent is publicly owned (USDA, 1990). Harvested timber is primarily marketed for paper pulp, waferboard, and small sawlogs. Forest cover and productivity are influenced significantly by soil drainage, pH, fertility, and water-holding capacity. Soil has a profound effect on whether or not a particular species can be grown with success. It affects natural regeneration, planting options, plant competition, windthrow, and timber harvest.

Aspen is the dominant forest type on mineral soils in Roseau County. This species is adapted to a wide range of soils. In the eastern part of the county, aspen stands support a mix of balsam fir, white spruce, and jack pine. In the western part of the county, aspen grows in nearly pure stands. On wet sites, quaking aspen gives way to balsam poplar and black ash. On the higher ground along rivers and on remnant beach ridges of Glacial Lake Agassiz, aspen gives way to bur oak. The productivity of bur oak is limited in the flatter areas because of wetness.

Jack pine is the dominant species on the coarse textured, better drained soils in the eastern part of the county. This species makes up about 15 percent of the forest land in the county. Natural red pine exists as a component of jack pine stands but has been planted in pure and mixed stands on a considerable acreage (fig. 18).

Swamp conifers, including black spruce, tamarack, and northern whitecedar, make up about 20 percent of the forest land in the county. Productivity varies greatly on the organic soils, due mostly to differences in water movement and water chemistry (Boelter, 1955; USDA, 1977). Some vegetative patterns have been permanently altered by the judicial ditch network, land clearing, and wildfire.

Forest Productivity

Information about the potential productivity of map unit components for merchantable or *common trees* is provided in table 12.

The potential productivity of a component is expressed as a site index and as a volume number.

The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important trees. This number, expressed as cubic feet per acre per year,



Figure 18.—A clearcut in an area of Wurtsmith loamy sand, MAP 18-22, 0 to 3 percent slopes. Most areas of this soil are forested, and jack pine, red pine, and quaking aspen are the major species. This site will be replanted with red pine or jack pine.

indicates the amount of wood fiber produced in a fully stocked, even-aged stand.

Trees to manage are those that are suitable for commercial wood production.

Forest Land Management Considerations

Information about the hazards and limitations that should be considered in areas used as forest land are given in tables 13, 14, 15, and 16.

Forest Land Harvest Equipment Considerations

Table 13 lists the management considerations affecting the use of harvesting equipment. Considerations shown in the table are as follows:

Slope.—The upper slope limit is more than 15 percent.

Flooding.—The map unit component is frequently flooded.

Wetness.—The map unit component is somewhat poorly drained, poorly drained, or very poorly drained or has a perched zone in which the soil moisture status is wet (any drainage class).

Depth to hard rock.—The depth to hard bedrock is less than 10 inches.

Rubbly surface.—The word “rubbly” is in the map unit name.

Surface stones.—The words “extremely stony” are included in the description of the surface layer, or 3 percent or more of the surface is covered with stones.

Surface boulders.—The word “bouldery” is included in the description of the surface layer, or 0.01 percent or more of the surface is covered with boulders.

Areas of rock outcrop.—The words “Rock outcrop” are in the map unit name.

Susceptible to rutting and wheel slippage (low strength).—The AASHTO classification is A-6, A-7, or A-8 in any layer at a depth of 20 inches or less.

Poor traction (loose sandy material).—The USDA texture includes sands or loamy sands in any layer at a depth of 10 inches or less.

Forest Haul Road Considerations

Haul roads serve as transportation routes from log landings to primary roads. Generally, haul roads are unpaved, but some are graveled.

Considerations shown in table 14 are as follows:

Slope.—The slope is 8 percent or more.

Flooding.—The map unit component is frequently flooded.

Wetness.—The map unit component is somewhat poorly drained, poorly drained, or very poorly drained

or has a perched zone in which the soil moisture status is wet (any drainage class).

Depth to hard rock.—The depth to hard bedrock is less than 20 inches.

Depth to soft rock.—The depth to soft bedrock is less than 20 inches.

Surface boulders.—The word “bouldery” is included in the description of the surface layer, or 0.01 percent or more of the surface is covered with boulders.

Areas of rock outcrop.—The words “Rock outcrop” are in the map unit name.

Low bearing strength.—The AASHTO classification is A-6, A-7, or A-8 in any layer at a depth of 20 inches or less.

Rubbly surface.—The word “rubbly” is in the map unit name.

Forest Log Landing Considerations

Log landings are areas where logs are assembled for transportation. Areas that require little or no cutting, filling, or surface preparation are desired.

Considerations shown in table 15 are as follows:

Slope.—The slope is more than 6 percent.

Flooding.—The map unit component is occasionally flooded or frequently flooded.

Wetness.—The map unit component is somewhat poorly drained, poorly drained, or very poorly drained or has a perched zone in which the soil moisture status is wet (any drainage class).

Surface boulders.—The word “bouldery” is included in the description of the surface layer, or 0.01 percent or more of the surface is covered with boulders.

Areas of rock outcrop.—The words “Rock outcrop” are in the map unit name.

Susceptible to rutting and wheel slippage (low strength).—The AASHTO classification is A-6, A-7, or A-8 in any layer at a depth of 20 inches or less.

Rubbly surface.—The word “rubbly” is in the map unit name.

Forest Land Site Preparation and Planting Considerations

Considerations shown in table 16 are as follows:

Slope.—The upper slope limit is more than 15 percent.

Flooding.—The map unit component is frequently flooded.

Wetness.—The map unit component is somewhat poorly drained, poorly drained, or very poorly drained or has a perched zone in which the soil moisture status is wet (any drainage class).

Depth to hard rock.—The depth to hard bedrock is less than 20 inches.

Surface stones.—The word “stony” is included in the description of the surface layer, or 0.01 percent or more of the surface is covered with stones.

Surface boulders.—The word “bouldery” is included in the description of the surface layer, or 0.01 percent or more of the surface is covered with boulders.

Areas of rock outcrop.—The words “Rock outcrop” are in the map unit name.

Water erosion.—The slope is 8 percent or more.

Potential poor tilth and compaction.—The AASHTO classification is A-6 or A-7 in the upper 10 inches.

Rubbly surface.—The word “rubbly” is in the map unit name.

Cobbly surface.—The word “cobbly” is included in the description of the surface layer, or 0.1 percent or more of the surface is covered with cobbles.

Recreation

Roseau County offers a variety of recreational opportunities throughout the year. The county has a large amount of public land, including portions of two State forests, several wildlife management areas, and one State park. Roseau County is bordered by Lake of the Woods on the northeast and has several impoundments and rivers scattered throughout the area (fig. 19).

The soils of the survey area are rated in table 17 according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 17, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that

soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or a combination of these.

The information in table 17 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 20 and interpretations for dwellings without basements and for local roads and streets in table 19.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have mild slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a hardpan should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.



Figure 19.—An area of Hiwood fine sand, 1 to 6 percent slopes, along the shore of Hayes Lake. This lake was created for the purpose of increasing the water-related recreation available in the county. It was completed in 1973 and is a popular site for fishing, boating, and camping.

Wildlife Habitat

Stanley T. Wood, area wildlife manager, Roseau River Wildlife Area, Minnesota Department of Natural Resources, assisted in the preparation of this section.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. If food, cover, or water is missing, inadequate, or inaccessible, wildlife will be scarce or will not inhabit the area.

Manipulation of the type of cover usually causes changes in wildlife species composition and in population levels. Although several elements affect the presence and number of animals, land use is one of the more important factors. The two main land uses in Roseau County are agriculture and forestry.

The potential of the soils for habitat development varies throughout the survey area. Wildlife habitat can be created or improved by planting appropriate

vegetation, properly managing the existing plant cover, and fostering the natural establishment of desirable plants.

Kinds of Wildlife Habitat

Five major land types occur in Roseau County: 1) agricultural areas with adjacent woodland and brushland; 2) bog areas; 3) pine forest; 4) beach ridges and the lower, adjacent interbeach areas; and 5) deciduous forests. Each of these areas is associated with a distinct group of soils. Interspersions of these land types occur in many areas of the county. Wetlands, which are extremely important to numerous species of waterfowl and wildlife, occur throughout the county. They range in size and type from small depressions in crop fields to thick peat deposits covering several thousand acres.

The agricultural areas and the adjacent woodland and brushland are distributed throughout the county. These areas make up approximately 60 percent of the land area. Soils in these areas are typically fertile and highly productive and are capable of supporting a wide variety of game and nongame species. Prior to the permanent settlement of the survey area, most of the soils in these areas supported tall grass prairie vegetation and developed thick layers of rich topsoil. Many prairie species no longer grow in the area. Areas that are cropped may provide high-quality food and forage during the spring, summer, and early fall. The wildlife cover that remains consists of scattered woodlots, aspen islands, and narrow ribbons of woodland and brush along rivers, creeks, and ponds.

Bogs occur throughout the county. These areas are characterized by wet, organic soils interspersed with higher lying islands of mineral soils. Soils in these areas have developed under saturated conditions (fig. 20). The most notable bogs occur in the northern part of the county, in the Roseau River Wildlife Management Area and Lost River State Forest. Organic soils in the bogs support a variety of vegetative cover ranging from spruce and tamarack timber to grasses and sedges. These areas provide a unique blend of forage and cover that attracts a wide variety of wildlife, including some very rare animals, such as the great grey owl. A small percentage of the organic deposits has been developed for agriculture.

A third habitat type, similar in size to the bog areas, is characterized by forest vegetation on sandy beach deposits. These beach deposits lie primarily within the Beltrami Island State Forest in the southeastern part of the county. The sandy soils in this area are typically droughty and infertile. They are generally unsuited to agriculture but do support a coniferous forest that is interspersed with deciduous growth. Forestry is the primary land use in this area.

A fourth, smaller habitat type consists of narrow beach ridges and the adjacent, lower lying interbeach areas. A good example of this habitat type is the Campbell Beach Ridge in the central part of the county. In areas of this habitat type, the high ridges generally have sandy or gravelly soils that support hardwood stands. These ridges typically drop off rapidly to lower lying, very poorly drained organic soils. The diversity caused by the rapidly changing terrain provides for a variety of food and cover. Some areas along the beach ridges have been cleared and planted to small grain and hay.

The fifth and smallest habitat type is the deciduous forest in eastern Roseau County. This area is transitional, grading from the tall grass prairie region of

the west to the forest of the east. The soils, which are generally wet due to a high water table and which have developed only a thin layer of topsoil, reflect this transitional status. Although most of the area is covered by deciduous forest interspersed with fir and spruce, portions have been cleared and planted to small grain and hay.

Elements of Wildlife Habitat

The potential of the soils in the survey area for use as wildlife habitat is rated in table 18. The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants used by wildlife. Examples are corn, soybeans, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes planted for wildlife food and cover. Examples are brome grass, timothy, orchard grass, clover, alfalfa, wheat grass, and birdsfoot trefoil.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds, that provide food and cover for wildlife. Examples are bluestems, indiagrass, blueberry, goldenrod, lambsquarters, dandelions, blackberry, ragweed, wheat grass, and nightshade.

The major soil properties affecting the growth of grain and forage crops and wild herbaceous plants are depth of the root zone, texture of the surface layer, the amount of water available to plants, wetness, salinity, and flooding. The length of the growing season also is important.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage that wildlife eat. Examples are oak, poplar, box elder, birch, maple, green ash, willow, and American elm. Examples of fruit-producing shrubs that are suitable for planting on soils that have good potential for these plants are hawthorn, honeysuckle, American plum, redosier dogwood, chokecherry, highbush cranberry, elderberry, gooseberry, serviceberry, silver buffaloberry, and crabapple.

Coniferous plants are cone-bearing trees, shrubs, or ground cover that provide habitat or supply food in the form of browse, seed, or fruit-like cones. Examples are pine, spruce, cedar, and tamarack.

Shrubs are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Examples of shrubs are mountain mahogany, bitterbrush, snowberry, and big sagebrush.



Figure 20.—A typical area of Cathro muck, ponded, MAP 22-30, 0 to 1 percent slopes, along the shores of Lake of the Woods. Extended periods of soil saturation limit plant growth to cattails and other hydrophytic species. Haug soils, which support woody vegetation, are in the slightly higher areas on the left.

The major soil properties affecting the growth of hardwood and coniferous trees and shrubs are depth of the root zone, the amount of water available to plants, and wetness.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Wetland plants produce food or cover for wetland wildlife. Examples of these plants are smartweeds, wild millet, rushes, sedges, bulrushes, wild rice, arrowhead, waterplantain, cattail, prairie cordgrass, bluejoint grass, asters, and beggarticks.

The major soil properties affecting wetland plants are texture of the surface layer, wetness, acidity or alkalinity, and slope.

Shallow water areas have an average depth of less than 5 feet. They are useful as habitat for some wildlife species. They are naturally wet areas or are created by dams, levees, or water-control measures in

marshes or streams (fig. 21). Examples are waterfowl feeding areas, wildlife watering developments, beaver ponds, and other wildlife ponds.

The major soil properties affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed



Figure 21.—An impoundment in an area of Percy loam, 0 to 2 percent slopes, very cobbly, at the Nereson Wildlife Management Area. Shallow water areas have been created by dredging and diking for wildlife habitat and recreational uses.

grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, and bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that

restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal zone in which the soil moisture status is wet, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Table 19 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are

minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to a zone in which the soil moisture status is wet, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to a zone in which the soil moisture status is wet, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a zone in which the soil moisture status is wet, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a zone in which the soil moisture status is wet, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The

ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a zone in which the soil moisture status is wet, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a zone in which the soil moisture status is wet, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a zone in which the soil moisture status is wet, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a zone in which the soil moisture status is wet, and ponding.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a zone in which the soil moisture status is wet; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a zone in which the soil moisture status is wet, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Table 20 shows the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations

are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

The table also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a zone in which the soil moisture status is wet, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a zone in which the soil moisture status is

wet, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if a zone in which the soil moisture status is wet is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a zone in which the soil moisture status is wet, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They

determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a zone in the which soil moisture status is wet, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or a zone in which the soil moisture status is wet is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a zone in which the soil moisture status is wet, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or a zone in which the soil moisture status is wet to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Table 21 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good*, *fair*, or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a zone high in the profile in which the moisture status is wet, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to a zone in which the soil moisture status is wet is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate

shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to a zone in which the soil moisture status is wet is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They have a zone in which the soil moisture status is wet at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction (fig. 22). Specifications for each use vary widely. In table 21, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a zone in which the soil moisture status is wet, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a zone in which the soil moisture status is wet, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, stones, or soluble salts, have slopes of more than 15 percent, or have a seasonal zone, at or near the surface, in which the soil moisture status is wet.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 22 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a



Figure 22.—An area of Clearriver loamy fine sand, 0 to 3 percent slopes, which has been excavated for sand and gravel. Clearriver soils formed in sandy and gravelly beach deposits.

depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A zone high in the profile in which the soil moisture status is wet can affect the amount of usable material. It can also affect trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth

below a permanent saturated zone. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent zone in which the soil moisture status is wet, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a zone high in the profile in which the soil moisture status is wet or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of

ditchbanks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to a zone in which the soil moisture status is wet, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or to a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a

combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Table 6.--Cropland Management Considerations

(See text for a description of the considerations listed in this table.)

Map symbol and component name	Percent of map unit	Cropland management considerations
47:		
Colvin-----	85	Lime content Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Bearden-----	5	Lime content Potential for ground-water contamination Wet soil moisture status Wind erosion
Grano-----	5	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Sax-----	5	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
48B:		
Hiwood-----	85	Acid soil Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Redby-----	7	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Clearriver-----	3	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion
Cormant-----	3	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Zimmerman-----	2	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
52:		
Augsburg-----	85	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Croke-----	5	Potential for ground-water contamination Wet soil moisture status Wind erosion
Grano-----	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Sago-----	5	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
59:		
Grimstad-----	85	Excessive permeability Lime content Potential for ground-water contamination Wet soil moisture status Wind erosion
Strathcona-----	12	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Foxhome-----	3	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
64:		
Ulen-----	85	Excessive permeability Lime content Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
Rosewood-----	10	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
64:		
Redby-----	3	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Rushlake-----	2	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
65:		
Foxhome-----	85	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Strandquist-----	12	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Skagen-----	3	Lime content Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
67:		
Bearden-----	85	Lime content Potential for ground-water contamination Wet soil moisture status Wind erosion
Colvin-----	15	Lime content Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
77:		
Garnes-----	85	Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Chilgren-----	10	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Eckvoll-----	3	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
77: Pelan-----	2	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
111: Hangaard-----	90	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Deerwood-----	5	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Rushlake-----	3	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Rosewood-----	2	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
116: Redby-----	85	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Cormant-----	8	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Hiwood-----	6	Acid soil Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
116: Leafriver-----	1	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
117: Cormant-----	85	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Leafriver-----	7	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Epoufette-----	3	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Redby-----	3	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Grygla, depressional-----	2	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
133: Dalbo-----	85	Potential for ground-water contamination Wet soil moisture status
Mustinka-----	10	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Moranville-----	5	Excessive permeability Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
145:		
Enstrom-----	85	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Grygla-----	10	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Redby-----	4	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Pelan-----	1	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
147:		
Spooner-----	85	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Baudette-----	5	Potential for ground-water contamination Potential for surface-water contamination Water erosion Wet soil moisture status Wind erosion
Grygla-----	5	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Sago-----	5	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
158B:		
Zimmerman-----	85	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
158B:		
Hiwood-----	6	Acid soil Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Two Inlets-----	6	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion
Redby-----	3	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
167B:		
Baudette-----	85	Potential for ground-water contamination Potential for surface-water contamination Water erosion Wet soil moisture status Wind erosion
Spooner-----	10	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Moranville-----	5	Excessive permeability Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
187:		
Haug-----	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Percy-----	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Cathro-----	3	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
187: Boash-----	2	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
191: Epoufette-----	85	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Cormant-----	5	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Leafriver-----	5	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Meehan-----	5	Excessive permeability Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
202: Meehan-----	85	Excessive permeability Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
Cormant-----	8	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Wurtsmith-----	5	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
202: Leafriver-----	2	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
205: Karlstad-----	85	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Sahkahtay-----	7	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Marquette-----	5	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Wind erosion
Redby-----	2	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Pits, gravel-----	1	Not rated
242B: Marquette-----	85	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Wind erosion
Karlstad-----	14	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Pits, gravel-----	1	Not rated
280: Pelan-----	85	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Strandquist-----	10	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
280:		
Garnes-----	3	Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Marquette-----	1	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Wind erosion
Pits, gravel-----	1	Not rated
379:		
Percy, very cobbly-----	90	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Boash-----	3	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Strandquist-----	3	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Haug-----	2	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Skagen, very cobbly-----	2	Lime content Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
383:		
Percy-----	90	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Boash-----	3	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
383: Strandquist-----	3	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Haug-----	2	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Skagen-----	2	Lime content Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
384: Percy, depressional-----	85	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Haug-----	7	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Percy-----	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Boash-----	3	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
387: Roliss, depressional-----	85	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Haug-----	10	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
387: Roliss-----	5	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
404: Chilgren-----	85	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Garnes-----	5	Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Grygla-----	5	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Haug-----	5	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
412: Mavie-----	85	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Foxhome-----	5	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Northwood-----	5	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Percy, very cobbly-----	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
432:		
Strandquist-----	85	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Percy, very cobbly-----	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Haug-----	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Boash-----	3	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Foxhome-----	3	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
433:		
Syrene, depressional-----	85	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Deerwood-----	5	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Rosewood-----	5	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
433: Syrene-----	5	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
435: Syrene-----	85	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Rosewood-----	5	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Syrene, depressional-----	5	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Karlsruhe-----	3	Excessive permeability Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
Deerwood-----	2	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
439: Strathcona-----	85	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
439:		
Northwood-----	5	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Percy-----	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Grimstad-----	3	Excessive permeability Lime content Potential for ground-water contamination Wet soil moisture status Wind erosion
Strandquist-----	2	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
481:		
Kratka-----	85	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Northwood-----	5	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Percy-----	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Enstrom-----	3	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Strandquist-----	2	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
482:		
Grygla-----	85	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Chilgren-----	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grygla, depressional-----	5	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Enstrom-----	3	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Northwood-----	2	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
532:		
Sago-----	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Cathro-----	5	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Zippel-----	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
534:		
Mooselake-----	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
534:		
Bullwinkle-----	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Dora-----	3	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Tawas-----	3	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
540:		
Seelyeville-----	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Cathro-----	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Dora-----	3	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Markey-----	3	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
541:		
Rifle-----	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
541: Tacoosh-----	10	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
543: Markey-----	90	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Cormant-----	5	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Seelyeville-----	5	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
544: Cathro-----	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Percy, very cobbly-----	4	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Grygla-----	3	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Seelyeville-----	3	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
546:		
Lupton-----	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Bullwinkle-----	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Dora-----	3	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Tawas-----	3	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
547:		
Deerwood-----	90	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Markey-----	4	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Rosewood-----	3	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Syrene-----	3	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
550:		
Dora-----	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Boash-----	4	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Seelyeville-----	3	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Woodslake-----	3	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status
561:		
Bullwinkle-----	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Lupton-----	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Northwood, wooded-----	4	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Chilgren-----	2	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
563:		
Northwood-----	90	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grygla-----	4	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Berner-----	3	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Strandquist-----	3	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
565:		
Eckvoll-----	85	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Chilgren-----	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grygla-----	5	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Hiwood-----	5	Acid soil Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
568:		
Zippel-----	85	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
568: Augsburg, depressional-----	5	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Sago-----	5	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Skime-----	5	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
569: Wabanica-----	85	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Warroad-----	6	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Sax-----	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grano-----	3	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Enstrom-----	2	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
570: Faunce-----	85	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
570:		
Clearriver-----	7	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion
Zimmerman-----	4	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion
Meehan-----	3	Excessive permeability Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
Pits, gravel-----	1	Not rated
581:		
Percy-----	90	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Haug-----	5	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Boash-----	3	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Skagen-----	2	Lime content Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
582:		
Roliss-----	85	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Roliss, depressional-----	7	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Boash-----	5	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
582: Haug-----	3	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
583: Nereson-----	85	Potential for ground-water contamination Wet soil moisture status Wind erosion
Percy-----	10	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Pelan-----	3	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Foxhome-----	2	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
627: Tawas-----	90	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Leafriver-----	4	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Lupton-----	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Cormant-----	2	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
630: Wildwood-----	90	High content of organic matter Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Boash-----	4	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Dora-----	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Espelie-----	2	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
643: Huot-----	85	Excessive permeability Lime content Potential for ground-water contamination Wet soil moisture status Wind erosion
Thiefriver-----	12	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Redby-----	3	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
644: Boash-----	85	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Percy-----	7	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
644: Woodslake-----	5	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status
Strandquist-----	3	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
645: Espelie-----	85	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grano-----	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Hilaire-----	5	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Wildwood-----	5	High content of organic matter Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
651: Thiefriever-----	85	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grano-----	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Huot-----	5	Excessive permeability Lime content Potential for ground-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
651: Wildwood-----	5	High content of organic matter Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
708: Rushlake-----	85	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Corliss-----	6	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Redby-----	5	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Hangaard-----	3	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Pits, gravel-----	1	Not rated
712: Rosewood-----	85	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Deerwood-----	6	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Hangaard-----	5	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
712: Ulen-----	4	Excessive permeability Lime content Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
721B: Corliss-----	85	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Rushlake-----	10	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Hangaard-----	4	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Pits, gravel-----	1	Not rated
733: Berner-----	90	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grygla-----	5	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Seelyeville-----	5	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
737: Mahkonce-----	85	Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Auganaush-----	10	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
737: Eckvoll-----	5	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
755: Woodslake-----	85	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status
Boash-----	8	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Wildwood-----	5	High content of organic matter Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Dora-----	2	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
767: Auganaush-----	90	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Mustinka-----	5	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Wildwood-----	3	High content of organic matter Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Mahkonce-----	2	Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
794:		
Clearriver-----	85	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion
Hiwood-----	7	Acid soil Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Meehan-----	5	Excessive permeability Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
Faunce-----	3	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion
1002:		
Fluvaquents, frequently flooded-----	90	Flooding Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Seelyeville-----	6	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Hapludalfs-----	2	Slope Limited content of organic matter Potential for ground-water contamination Potential for surface-water contamination Water erosion Wet soil moisture status Wind erosion
Water-----	2	Not rated
1030:		
Pits, gravel-----	75	Not rated
Udipsamments-----	20	Slope Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Potential for surface-water contamination Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1030:		
Corliss-----	2	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Karlstad-----	2	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Hangaard-----	1	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1031:		
Seelyeville, ponded-----	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Cathro-----	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Dora-----	3	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Markey-----	3	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1067:		
Fluvaquents, frequently flooded-----	60	Flooding Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Hapludalfs-----	30	Slope Limited content of organic matter Potential for ground-water contamination Potential for surface-water contamination Water erosion Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1067: Seelyeville-----	5	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Water-----	5	Not rated
1133B: Skime-----	85	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Hiwood-----	10	Acid soil Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Zippel-----	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1134: Borup-----	55	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Glyndon-----	35	Lime content Potential for ground-water contamination Wet soil moisture status Wind erosion
Augsburg, depression-----	5	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Skime-----	5	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1144: Strathcona, depressional-----	45	Excessive permeability Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Kratka, depressional-----	45	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Kratka-----	5	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Northwood-----	5	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1154: Sax-----	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Wabanica-----	5	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Cathro-----	3	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Woodslake-----	2	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1158:		
Skagen-----	85	Lime content Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Percy-----	10	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Foxhome-----	5	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
1170:		
Skagen, very cobbly-----	85	Lime content Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Percy, very cobbly-----	10	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Foxhome-----	5	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
1179B:		
Moranville-----	85	Excessive permeability Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Baudette-----	5	Potential for ground-water contamination Potential for surface-water contamination Water erosion Wet soil moisture status Wind erosion
Hiwood-----	5	Acid soil Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Spooner-----	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1181:		
Rosewood-----	50	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Ulen-----	40	Excessive permeability Lime content Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
Redby-----	5	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Deerwood-----	3	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Syrene-----	2	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1182:		
Warroad-----	85	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Wabanica-----	7	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Enstrom-----	5	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1182: Sax-----	3	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1187: Dora, ponded-----	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status
Seelyeville, ponded-----	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Wildwood-----	4	High content of organic matter Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Boash-----	2	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1191: Sahkahtay-----	85	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Cormant-----	5	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Deerwood-----	5	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1191:		
Karlstad-----	3	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Redby-----	2	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
1206:		
Cormant-----	55	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Redby-----	35	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Hiwood-----	5	Acid soil Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Leafriver-----	5	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1214:		
Mustinka-----	90	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Espelie-----	4	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1214: Wildwood-----	4	High content of organic matter Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Dalbo-----	2	Potential for ground-water contamination Wet soil moisture status
1274B: Redby-----	40	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Hiwood-----	30	Acid soil Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Leafriver, wooded-----	15	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Clearriver-----	5	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion
Cormant-----	5	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Zimmerman-----	5	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion
1298: Borup-----	90	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1298: Augsburg, depressional-----	3	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Glyndon-----	3	Lime content Potential for ground-water contamination Wet soil moisture status Wind erosion
Sago-----	2	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Skime-----	2	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
1302: Foldahl-----	85	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Kratka-----	10	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Foxhome-----	5	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
1304: Glyndon-----	85	Lime content Potential for ground-water contamination Wet soil moisture status Wind erosion
Borup-----	10	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Skime-----	5	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1305:		
Hilaire-----	85	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Espelie-----	11	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grano-----	2	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Redby-----	2	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
1314:		
Tacoosh-----	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Rifle-----	8	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Sax-----	2	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1316:		
Wheatville-----	85	Lime content Potential for ground-water contamination Wet soil moisture status Wind erosion
Augsburg-----	13	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Grano-----	2	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1326:		
Augsburg, depressional-----	45	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Wabanica, depressional-----	45	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Sax-----	6	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Espelie-----	2	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Zippel-----	2	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1327B:		
Karlstad-----	65	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Marquette-----	25	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Wind erosion
Sahkahtay-----	7	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Redby-----	3	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1328:		
Northwood, wooded-----	90	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Berner, wooded-----	5	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grygla-----	5	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1333:		
Dora, wooded-----	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Lupton-----	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Wildwood-----	4	High content of organic matter Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Auganaush-----	2	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1356:		
Water, miscellaneous-----	100	Not rated
1399B:		
Two Inlets-----	85	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1399B:		
Wurtsmith-----	6	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Zimmerman-----	6	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion
Meehan-----	3	Excessive permeability Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
1401:		
Grygla, depressional-----	90	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Northwood, wooded-----	5	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Chilgren-----	3	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grygla-----	2	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1402:		
Leafriver, wooded-----	90	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Cormant-----	4	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1402:		
Tawas-----	4	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Redby-----	2	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
1404:		
Berner, wooded-----	90	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Lupton-----	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Northwood, wooded-----	4	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Grygla-----	2	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1405:		
Lallie-----	90	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Sax-----	7	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1405: Wabanica-----	3	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1414: Nereson, very cobbly-----	85	Potential for ground-water contamination Wet soil moisture status Wind erosion
Percy, very cobbly-----	10	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Pelan-----	3	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Foxhome-----	2	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
1428: Karlsruhe-----	85	Excessive permeability Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
Syrene-----	10	Excessive permeability Lime content Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Ulen-----	5	Excessive permeability Lime content Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
1444: Wurtsmith-----	85	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
Meehan-----	10	Excessive permeability Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1444:		
Clearriver-----	2	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion
Two Inlets-----	2	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wind erosion
Cormant-----	1	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1448:		
Grano-----	90	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Percy-----	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Augsburg-----	3	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Woodslake-----	2	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status
1449:		
Grano-----	90	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Percy-----	5	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1449: Augsburg-----	3	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Woodslake-----	2	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status
1807: Cathro, ponded-----	90	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Haug-----	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Seelyeville, ponded-----	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Percy-----	2	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1808: Markey, ponded-----	90	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Leafriver-----	4	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Seelyeville, ponded-----	4	High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1808: Cormant-----	2	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1918: Croke-----	85	Potential for ground-water contamination Wet soil moisture status Wind erosion
Augsburg-----	13	Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status Wind erosion
Grano-----	2	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1923B: Garnes, very stony-----	85	Limited content of organic matter Potential for ground-water contamination Potential for surface-water contamination Surface stones Water erosion Wet soil moisture status
Chilgren-----	10	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Eckvoll-----	3	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
Pelan-----	2	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
1984: Leafriver-----	90	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Percent of map unit	Cropland management considerations
1984:		
Cormant-----	5	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Markey-----	3	Excessive permeability High content of organic matter Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Redby-----	2	Excessive permeability Limited available water capacity Limited content of organic matter Potential for ground-water contamination Wet soil moisture status Wind erosion
W:		
Water-----	100	Not rated

Table 7.--Land Capability and Yields per Acre of Crops

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

Map symbol and component name	Percent of map unit	Land capability	Barley	Oats	Sunflowers	Spring wheat
			Bu	Bu	Lbs	Bu
47-----			80	85	1800	45
Colvin-----	85	2w				
Bearden-----	5	2s				
Grano-----	5	2w				
Sax-----	5	6w				
48B-----			20	40	600	15
Hiwood-----	85	4s				
Redby-----	7	3w				
Clearriver-----	3	4s				
Cormant-----	3	4w				
Zimmerman-----	2	4s				
52-----			80	85	1800	45
Augsburg-----	85	2w				
Croke-----	5	1				
Grano-----	5	2w				
Sago-----	5	6w				
59-----			75	80	1300	40
Grimstad-----	85	2s				
Strathcona-----	12	2w				
Foxhome-----	3	3s				
64-----			60	70	900	30
Ulen-----	85	3s				
Rosewood-----	10	3w				
Redby-----	3	3w				
Rushlake-----	2	4s				
65-----			55	65	900	30
Foxhome-----	85	3s				
Strandquist-----	12	3w				
Skagen-----	3	2e				
67-----			85	100	2000	55
Bearden-----	85	2s				
Colvin-----	15	2w				
77-----			75	85	1300	40
Garnes-----	85	1				
Chilgren-----	10	2w				
Eckvoll-----	3	3s				
Pelan-----	2	3s				
111-----			40	60	1000	30
Hangaard-----	90	4w				
Deerwood-----	5	6w				
Rushlake-----	3	4s				
Rosewood-----	2	3w				
116-----			35	55	700	20
Redby-----	85	3w				
Cormant-----	8	4w				
Hiwood-----	6	4s				
Leafriver-----	1	6w				

Table 7.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and component name	Percent of map unit	Land capability	Barley	Oats	Sunflowers	Spring wheat
			Bu	Bu	Lbs	Bu
117-----			45	60	800	25
Cormant-----	85	4w				
Leafriver-----	7	6w				
Epoufette-----	3	3w				
Redby-----	3	3w				
Grygla, depressiona-----	2	6w				
133-----			80	90	1800	45
Dalbo-----	85	1				
Mustinka-----	10	2w				
Moranville-----	5	3s				
145-----			55	65	900	30
Enstrom-----	85	4s				
Grygla-----	10	4w				
Redby-----	4	3w				
Pelan-----	1	3s				
147-----			50	65	800	30
Spooner-----	85	2w				
Baudette-----	5	2e				
Grygla-----	5	4w				
Sago-----	5	6w				
158B-----			20	35	500	15
Zimmerman-----	85	4s				
Hiwood-----	6	4s				
Two Inlets-----	6	4s				
Redby-----	3	3w				
167B-----			70	85	1300	40
Baudette-----	85	2e				
Spooner-----	10	2w				
Moranville-----	5	3s				
187-----			---	---	---	---
Haug-----	90	6w				
Percy-----	5	2w				
Cathro-----	3	6w				
Boash-----	2	2w				
191-----			30	50	700	20
Epoufette-----	85	3w				
Cormant-----	5	4w				
Leafriver-----	5	6w				
Meehan-----	5	4w				
202-----			30	50	600	20
Meehan-----	85	4w				
Cormant-----	8	4w				
Wurtsmith-----	5	4s				
Leafriver-----	2	6w				
205-----			40	50	800	25
Karlstad-----	85	3s				
Sahkahtay-----	7	3w				
Marquette-----	5	4s				
Redby-----	2	3w				
Pits, gravel-----	1	---				
242B-----			30	40	600	20
Marquette-----	85	4s				
Karlstad-----	14	3s				
Pits, gravel-----	1	---				

Table 7.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and component name	Percent of map unit	Land capability	Barley	Oats	Sunflowers	Spring wheat
			Bu	Bu	Lbs	Bu
280-----			55	70	900	30
Pelan-----	85	3s				
Strandquist-----	10	3w				
Garnes-----	3	1				
Marquette-----	1	4s				
Pits, gravel-----	1	---				
379-----			70	75	1500	40
Percy, very cobbly-----	90	3w				
Boash-----	3	2w				
Strandquist-----	3	3w				
Haug-----	2	6w				
Skagen, very cobbly-----	2	3e				
383-----			75	80	1700	45
Percy-----	90	2w				
Boash-----	3	2w				
Strandquist-----	3	3w				
Haug-----	2	6w				
Skagen-----	2	2e				
384-----			30	45	700	20
Percy, depressional-----	85	6w				
Haug-----	7	6w				
Percy-----	5	2w				
Boash-----	3	2w				
387-----			30	45	700	20
Roliss, depressional-----	85	6w				
Haug-----	10	6w				
Roliss-----	5	2w				
404-----			50	65	800	30
Chilgren-----	85	2w				
Garnes-----	5	1				
Grygla-----	5	4w				
Haug-----	5	6w				
412-----			60	70	1300	40
Mavie-----	85	3w				
Foxhome-----	5	3s				
Northwood-----	5	6w				
Percy, very cobbly-----	5	3w				
432-----			60	70	1300	40
Strandquist-----	85	3w				
Percy, very cobbly-----	5	3w				
Haug-----	4	6w				
Boash-----	3	2w				
Foxhome-----	3	3s				
433-----			---	---	---	---
Syrene, depressional-----	85	6w				
Deerwood-----	5	6w				
Rosewood-----	5	3w				
Syrene-----	5	4w				
435-----			55	65	1000	30
Syrene-----	85	4w				
Rosewood-----	5	3w				
Syrene, depressional-----	5	6w				
Karlsruhe-----	3	4e				
Deerwood-----	2	6w				

Table 7.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and component name	Percent of map unit	Land capability	Barley	Oats	Sunflowers	Spring wheat
			Bu	Bu	Lbs	Bu
439-----			65	75	1400	40
Strathcona-----	85	2w				
Northwood-----	5	6w				
Percy-----	5	2w				
Grimstad-----	3	2s				
Strandquist-----	2	3w				
481-----			65	70	1400	40
Kratka-----	85	3w				
Northwood-----	5	6w				
Percy-----	5	2w				
Enstrom-----	3	4s				
Strandquist-----	2	3w				
482-----			55	65	1100	35
Grygla-----	85	4w				
Chilgren-----	5	2w				
Grygla, depressional-----	5	6w				
Enstrom-----	3	4s				
Northwood-----	2	6w				
532-----			---	---	---	---
Sago-----	90	6w				
Cathro-----	5	6w				
Zippel-----	5	2w				
534-----			---	---	---	---
Mooselake-----	90	6w				
Bullwinkle-----	4	6w				
Dora-----	3	6w				
Tawas-----	3	6w				
540-----			---	---	---	---
Seelyeville-----	90	6w				
Cathro-----	4	6w				
Dora-----	3	6w				
Markey-----	3	6w				
541-----			---	---	---	---
Rifle-----	90	6w				
Tacoosh-----	10	6w				
543-----			---	---	---	---
Markey-----	90	6w				
Cormant-----	5	4w				
Seelyeville-----	5	6w				
544-----			---	---	---	---
Cathro-----	90	6w				
Percy, very cobbly-----	4	3w				
Grygla-----	3	4w				
Seelyeville-----	3	6w				
546-----			---	---	---	---
Lupton-----	90	7w				
Bullwinkle-----	4	6w				
Dora-----	3	6w				
Tawas-----	3	6w				
547-----			---	---	---	---
Deerwood-----	90	6w				
Markey-----	4	6w				
Rosewood-----	3	3w				
Syrene-----	3	4w				

Table 7.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and component name	Percent of map unit	Land capability	Barley	Oats	Sunflowers	Spring wheat
			Bu	Bu	Lbs	Bu
550-----			---	---	---	---
Dora-----	90	6w				
Boash-----	4	2w				
Seelyeville-----	3	6w				
Woodslake-----	3	3w				
561-----			---	---	---	---
Bullwinkle-----	90	6w				
Lupton-----	4	7w				
Northwood, wooded-----	4	6w				
Chilgren-----	2	2w				
563-----			---	---	---	---
Northwood-----	90	6w				
Grygla-----	4	4w				
Berner-----	3	4w				
Strandquist-----	3	3w				
565-----			55	65	900	30
Eckvoll-----	85	3s				
Chilgren-----	5	2w				
Grygla-----	5	4w				
Hiwood-----	5	4s				
568-----			75	80	1700	45
Zippel-----	85	2w				
Augsburg, depressional--	5	6w				
Sago-----	5	6w				
Skime-----	5	4s				
569-----			75	80	1800	45
Wabanica-----	85	2w				
Warroad-----	6	3w				
Sax-----	4	6w				
Grano-----	3	2w				
Enstrom-----	2	4s				
570-----			20	30	500	15
Faunce-----	85	4s				
Clearriver-----	7	4s				
Zimmerman-----	4	4s				
Meehan-----	3	4w				
Pits, gravel-----	1	---				
581-----			65	75	1500	40
Percy-----	90	2w				
Haug-----	5	6w				
Boash-----	3	2w				
Skagen-----	2	2e				
582-----			65	80	1700	40
Roliss-----	85	2w				
Roliss, depressional---	7	6w				
Boash-----	5	2w				
Haug-----	3	6w				
583-----			80	90	1900	45
Nereson-----	85	1				
Percy-----	10	2w				
Pelan-----	3	3s				
Foxhome-----	2	3s				

Table 7.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and component name	Percent of map unit	Land capability	Barley	Oats	Sunflowers	Spring wheat
			Bu	Bu	Lbs	Bu
627-----			---	---	---	---
Tawas-----	90	6w				
Leafriver-----	4	6w				
Lupton-----	4	7w				
Cormant-----	2	4w				
630-----			---	---	---	---
Wildwood-----	90	6w				
Boash-----	4	2w				
Dora-----	4	6w				
Espelie-----	2	2w				
643-----			70	80	1200	40
Huot-----	85	2s				
Thiefriver-----	12	2w				
Redby-----	3	3w				
644-----			70	80	1600	40
Boash-----	85	2w				
Percy-----	7	2w				
Woodslake-----	5	3w				
Strandquist-----	3	3w				
645-----			65	75	1400	40
Espelie-----	85	2w				
Grano-----	5	2w				
Hilaire-----	5	2s				
Wildwood-----	5	6w				
651-----			65	75	1400	40
Thiefriver-----	85	2w				
Grano-----	5	2w				
Huot-----	5	2s				
Wildwood-----	5	6w				
708-----			25	40	600	20
Rushlake-----	85	4s				
Corliss-----	6	4s				
Redby-----	5	3w				
Hangaard-----	3	4w				
Pits, gravel-----	1	---				
712-----			55	70	1000	30
Rosewood-----	85	3w				
Deerwood-----	6	6w				
Hangaard-----	5	4w				
Ulen-----	4	3s				
721B-----			25	40	500	15
Corliss-----	85	4s				
Rushlake-----	10	4s				
Hangaard-----	4	4w				
Pits, gravel-----	1	---				
733-----			---	---	---	---
Berner-----	90	4w				
Grygla-----	5	4w				
Seelyeville-----	5	6w				
737-----			75	85	1400	45
Mahkonce-----	85	2s				
Auganaush-----	10	2w				
Eckvoll-----	5	3s				

Table 7.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and component name	Percent of map unit	Land capability	Barley	Oats	Sunflowers	Spring wheat
			Bu	Bu	Lbs	Bu
755-----			25	35	700	20
Woodslake-----	85	3w				
Boash-----	8	2w				
Wildwood-----	5	6w				
Dora-----	2	6w				
767-----			65	75	1100	35
Auganaush-----	90	2w				
Mustinka-----	5	2w				
Wildwood-----	3	6w				
Mahkonce-----	2	2s				
794-----			25	40	700	20
Clearriver-----	85	4s				
Hiwood-----	7	4s				
Meehan-----	5	4w				
Faunce-----	3	4s				
1002-----			---	---	---	---
Fluvaquents, frequently flooded-----	90	6w				
Seelyeville-----	6	8w				
Hapludalfs-----	2	6e				
Water-----	2	---				
1030-----			---	---	---	---
Pits, gravel-----	75	---				
Udipsamments-----	20	8s				
Corliss-----	2	4s				
Karlstad-----	2	3s				
Hangaard-----	1	4w				
1031-----			---	---	---	---
Seelyeville, ponded-----	90	8w				
Cathro-----	4	6w				
Dora-----	3	6w				
Markey-----	3	6w				
1067-----			---	---	---	---
Fluvaquents, frequently flooded-----	60	6w				
Hapludalfs-----	30	6e				
Seelyeville-----	5	8w				
Water-----	5	---				
1133B-----			25	40	700	15
Skime-----	85	4s				
Hiwood-----	10	4s				
Zippel-----	5	2w				
1134-----			80	90	1900	50
Borup-----	55	2w				
Glyndon-----	35	2s				
Augsburg, depressional--	5	6w				
Skime-----	5	4s				
1144-----			25	45	700	20
Strathcona, depressional	45	6w				
Kratka, depressional----	45	6w				
Kratka-----	5	3w				
Northwood-----	5	6w				

Table 7.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and component name	Percent of map unit	Land capability	Barley	Oats	Sunflowers	Spring wheat
			Bu	Bu	Lbs	Bu
1154-----			---	---	---	---
Sax-----	90	6w				
Wabanica-----	5	2w				
Cathro-----	3	6w				
Woodslake-----	2	3w				
1158-----			80	90	1900	45
Skagen-----	85	2e				
Percy-----	10	2w				
Foxhome-----	5	3s				
1170-----			75	80	1700	40
Skagen, very cobbly-----	85	3e				
Percy, very cobbly-----	10	3w				
Foxhome-----	5	3s				
1179B-----			60	70	900	35
Moranville-----	85	3s				
Baudette-----	5	2e				
Hiwood-----	5	4s				
Spooner-----	5	2w				
1181-----			55	60	900	30
Rosewood-----	50	3w				
Ulen-----	40	3s				
Redby-----	5	3w				
Deerwood-----	3	6w				
Syrene-----	2	4w				
1182-----			65	75	1400	40
Warroad-----	85	3w				
Wabanica-----	7	2w				
Enstrom-----	5	4s				
Sax-----	3	6w				
1187-----			---	---	---	---
Dora, ponded-----	90	8w				
Seelyeville, ponded-----	4	8w				
Wildwood-----	4	6w				
Boash-----	2	2w				
1191-----			30	50	700	20
Sahkahtay-----	85	3w				
Cormant-----	5	4w				
Deerwood-----	5	6w				
Karlstad-----	3	3s				
Redby-----	2	3w				
1206-----			35	55	700	25
Cormant-----	55	4w				
Redby-----	35	3w				
Hiwood-----	5	4s				
Leafriver-----	5	6w				
1214-----			75	85	1600	45
Mustinka-----	90	2w				
Espelie-----	4	2w				
Wildwood-----	4	6w				
Dalbo-----	2	1				

Table 7.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and component name	Percent of map unit	Land capability	Barley	Oats	Sunflowers	Spring wheat
			Bu	Bu	Lbs	Bu
1274B-----			---	---	---	---
Redby-----	40	3w				
Hiwood-----	30	4s				
Leafriver, wooded-----	15	6w				
Clearriver-----	5	4s				
Cormant-----	5	4w				
Zimmerman-----	5	4s				
1298-----			80	85	1800	45
Borup-----	90	2w				
Augsburg, depressional--	3	6w				
Glyndon-----	3	2s				
Sago-----	2	6w				
Skime-----	2	4s				
1302-----			65	75	1200	35
Foldahl-----	85	2s				
Kratka-----	10	3w				
Foxhome-----	5	3s				
1304-----			85	100	2000	55
Glyndon-----	85	2s				
Borup-----	10	2w				
Skime-----	5	4s				
1305-----			65	75	1200	35
Hilaire-----	85	2s				
Espelie-----	11	2w				
Grano-----	2	2w				
Redby-----	2	3w				
1314-----			---	---	---	---
Tacoosh-----	90	6w				
Rifle-----	8	6w				
Sax-----	2	6w				
1316-----			80	85	2000	50
Wheatville-----	85	2s				
Augsburg-----	13	2w				
Grano-----	2	2w				
1326-----			25	35	700	20
Augsburg, depressional--	45	6w				
Wabanica, depressional--	45	6w				
Sax-----	6	6w				
Espelie-----	2	2w				
Zippel-----	2	2w				
1327B-----			35	45	700	25
Karlstad-----	65	3s				
Marquette-----	25	4s				
Sahkahtay-----	7	3w				
Redby-----	3	3w				
1328-----			---	---	---	---
Northwood, wooded-----	90	6w				
Berner, wooded-----	5	6w				
Grygla-----	5	4w				
1333-----			---	---	---	---
Dora, wooded-----	90	6w				
Lupton-----	4	7w				
Wildwood-----	4	6w				
Auganaush-----	2	2w				

Table 7.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and component name	Percent of map unit	Land capability	Barley	Oats	Sunflowers	Spring wheat
			Bu	Bu	Lbs	Bu
1356. Water, miscellaneous						
1399B-----			20	30	500	15
Two Inlets-----	85	4s				
Wurtsmith-----	6	4s				
Zimmerman-----	6	4s				
Meehan-----	3	4w				
1401-----			---	---	---	---
Grygla, depressional----	90	6w				
Northwood, wooded-----	5	6w				
Chilgren-----	3	2w				
Grygla-----	2	4w				
1402-----			---	---	---	---
Leafriver, wooded-----	90	6w				
Cormant-----	4	4w				
Tawas-----	4	6w				
Redby-----	2	3w				
1404-----			---	---	---	---
Berner, wooded-----	90	6w				
Lupton-----	4	7w				
Northwood, wooded-----	4	6w				
Grygla-----	2	4w				
1405-----			---	---	---	---
Lallie-----	90	8w				
Sax-----	7	6w				
Wabanica-----	3	2w				
1414-----			75	80	1700	40
Nereson, very cobbly----	85	3e				
Percy, very cobbly-----	10	3w				
Pelan-----	3	3s				
Foxhome-----	2	3s				
1428-----			25	40	800	20
Karlsruhe-----	85	4e				
Syrene-----	10	4w				
Ulen-----	5	3s				
1444-----			20	40	600	15
Wurtsmith-----	85	4s				
Meehan-----	10	4w				
Clearriver-----	2	4s				
Two Inlets-----	2	4s				
Cormant-----	1	4w				
1448-----			70	80	1600	40
Grano-----	90	2w				
Percy-----	5	2w				
Augsburg-----	3	2w				
Woodslake-----	2	3w				
1449-----			75	85	1900	45
Grano-----	90	2w				
Percy-----	5	2w				
Augsburg-----	3	2w				
Woodslake-----	2	3w				

Table 7.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and component name	Percent of map unit	Land capability	Barley	Oats	Sunflowers	Spring wheat
			Bu	Bu	Lbs	Bu
1807-----			---	---	---	---
Cathro, ponded-----	90	8w				
Haug-----	4	6w				
Seelyeville, ponded----	4	8w				
Percy-----	2	3w				
1808-----			---	---	---	---
Markey, ponded-----	90	8w				
Leafriver-----	4	6w				
Seelyeville, ponded----	4	8w				
Cormant-----	2	4w				
1918-----			80	85	2000	50
Croke-----	85	1				
Augsburg-----	13	2w				
Grano-----	2	2w				
1923B-----			---	---	---	---
Garnes, very stony-----	85	2e				
Chilgren-----	10	2w				
Eckvoll-----	3	3s				
Pelan-----	2	3s				
1984-----			---	---	---	---
Leafriver-----	90	6w				
Cormant-----	5	4w				
Markey-----	3	6w				
Redby-----	2	3w				
W. Water						

Table 8.--Land Capability and Yields per Acre of Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

Map symbol and component name	Percent of map unit	Land capability	Alfalfa hay Tons	Brome-grass- alfalfa AUM*	Reed canarygrass Tons
47-----			3.0	4.5	5.5
Colvin-----	85	2w			
Bearden-----	5	2s			
Grano-----	5	2w			
Sax-----	5	6w			
47-----			---	---	---
Colvin-----	85	2w			
Bearden-----	5	2s			
Grano-----	5	2w			
Sax-----	5	6w			
48B-----			4.0	4.5	---
Hiwood-----	85	4s			
Redby-----	7	3w			
Clearriver-----	3	4s			
Cormant-----	3	4w			
Zimmerman-----	2	4s			
52-----			3.0	5.0	5.5
Augsburg-----	85	2w			
Croke-----	5	1			
Grano-----	5	2w			
Sago-----	5	6w			
59-----			4.2	5.5	---
Grimstad-----	85	2s			
Strathcona-----	12	2w			
Foxhome-----	3	3s			
64-----			4.2	5.0	---
Ulen-----	85	3s			
Rosewood-----	10	3w			
Redby-----	3	3w			
Rushlake-----	2	4s			
65-----			4.2	5.5	---
Foxhome-----	85	3s			
Strandquist-----	12	3w			
Skagen-----	3	2e			
67-----			3.5	5.0	---
Bearden-----	85	2s			
Colvin-----	15	2w			
77-----			4.5	6.0	---
Garnes-----	85	1			
Chilgren-----	10	2w			
Eckvoll-----	3	3s			
Pelan-----	2	3s			
111-----			2.5	3.5	4.0
Hangaard-----	90	4w			
Deerwood-----	5	6w			
Rushlake-----	3	4s			
Rosewood-----	2	3w			

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Map symbol and component name	Percent of map unit	Land capability	Alfalfa hay Tons	Bromegrass- alfalfa AUM*	Reed canarygrass Tons
116-----			3.5	4.0	---
Redby-----	85	3w			
Cormant-----	8	4w			
Hiwood-----	6	4s			
Leafriver-----	1	6w			
117-----			3.0	3.5	4.0
Cormant-----	85	4w			
Leafriver-----	7	6w			
Epoufette-----	3	3w			
Redby-----	3	3w			
Grygla, depressional----	2	6w			
133-----			4.5	6.0	---
Dalbo-----	85	1			
Mustinka-----	10	2w			
Moranville-----	5	3s			
145-----			4.0	5.0	---
Enstrom-----	85	4s			
Grygla-----	10	4w			
Redby-----	4	3w			
Pelan-----	1	3s			
147-----			2.5	4.0	5.0
Spooner-----	85	2w			
Baudette-----	5	2e			
Grygla-----	5	4w			
Sago-----	5	6w			
158B-----			3.5	4.0	---
Zimmerman-----	85	4s			
Hiwood-----	6	4s			
Two Inlets-----	6	4s			
Redby-----	3	3w			
167B-----			4.5	6.0	---
Baudette-----	85	2e			
Spooner-----	10	2w			
Moranville-----	5	3s			
187-----			---	---	6.0
Haug-----	90	6w			
Percy-----	5	2w			
Cathro-----	3	6w			
Boash-----	2	2w			
191-----			3.0	3.5	4.0
Epoufette-----	85	3w			
Cormant-----	5	4w			
Leafriver-----	5	6w			
Meehan-----	5	4w			
202-----			3.5	4.0	---
Meehan-----	85	4w			
Cormant-----	8	4w			
Wurtsmith-----	5	4s			
Leafriver-----	2	6w			

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Map symbol and component name	Percent of map unit	Land capability	Alfalfa hay Tons	Bromegrass- alfalfa AUM*	Reed canarygrass Tons
205-----			4.0	5.0	---
Karlstad-----	85	3s			
Sahkahtay-----	7	3w			
Marquette-----	5	4s			
Redby-----	2	3w			
Pits, gravel-----	1	---			
242B-----			3.5	4.0	---
Marquette-----	85	4s			
Karlstad-----	14	3s			
Pits, gravel-----	1	---			
280-----			4.0	5.0	---
Pelan-----	85	3s			
Strandquist-----	10	3w			
Garnes-----	3	1			
Marquette-----	1	4s			
Pits, gravel-----	1	---			
379-----			3.0	4.5	5.5
Percy, very cobbly-----	90	3w			
Boash-----	3	2w			
Strandquist-----	3	3w			
Haug-----	2	6w			
Skagen, very cobbly-----	2	3e			
383-----			3.0	4.5	5.5
Percy-----	90	2w			
Boash-----	3	2w			
Strandquist-----	3	3w			
Haug-----	2	6w			
Skagen-----	2	2e			
384-----			---	---	5.5
Percy, depressional-----	85	6w			
Haug-----	7	6w			
Percy-----	5	2w			
Boash-----	3	2w			
387-----			---	---	5.5
Roliss, depressional-----	85	6w			
Haug-----	10	6w			
Roliss-----	5	2w			
404-----			2.5	4.0	5.0
Chilgren-----	85	2w			
Garnes-----	5	1			
Grygla-----	5	4w			
Haug-----	5	6w			
412-----			3.0	3.5	4.5
Mavie-----	85	3w			
Foxhome-----	5	3s			
Northwood-----	5	6w			
Percy, very cobbly-----	5	3w			
432-----			3.0	3.5	4.5
Strandquist-----	85	3w			
Percy, very cobbly-----	5	3w			
Haug-----	4	6w			
Boash-----	3	2w			
Foxhome-----	3	3s			

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Map symbol and component name	Percent of map unit	Land capability	Alfalfa hay Tons	Bromegrass- alfalfa AUM*	Reed canarygrass Tons
433-----			---	---	4.5
Syrene, depressional----	85	6w			
Deerwood-----	5	6w			
Rosewood-----	5	3w			
Syrene-----	5	4w			
435-----			3.0	3.5	4.0
Syrene-----	85	4w			
Rosewood-----	5	3w			
Syrene, depressional----	5	6w			
Karlsruhe-----	3	4e			
Deerwood-----	2	6w			
439-----			3.0	4.0	4.5
Strathcona-----	85	2w			
Northwood-----	5	6w			
Percy-----	5	2w			
Grimstad-----	3	2s			
Strandquist-----	2	3w			
481-----			3.0	4.0	4.5
Kratka-----	85	3w			
Northwood-----	5	6w			
Percy-----	5	2w			
Enstrom-----	3	4s			
Strandquist-----	2	3w			
482-----			2.8	4.0	4.5
Grygla-----	85	4w			
Chilgren-----	5	2w			
Grygla, depressional----	5	6w			
Enstrom-----	3	4s			
Northwood-----	2	6w			
532-----			---	---	6.0
Sago-----	90	6w			
Cathro-----	5	6w			
Zippel-----	5	2w			
534-----			---	---	---
Mooselake-----	90	6w			
Bullwinkle-----	4	6w			
Dora-----	3	6w			
Tawas-----	3	6w			
540-----			---	---	5.5
Seelyeville-----	90	6w			
Cathro-----	4	6w			
Dora-----	3	6w			
Markey-----	3	6w			
541-----			---	---	5.5
Rifle-----	90	6w			
Tacoosh-----	10	6w			
543-----			---	---	5.0
Markey-----	90	6w			
Cormant-----	5	4w			
Seelyeville-----	5	6w			

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Map symbol and component name	Percent of map unit	Land capability	Alfalfa hay Tons	Bromegrass- alfalfa AUM*	Reed canarygrass Tons
544-----			---	---	6.0
Cathro-----	90	6w			
Percy, very cobbly-----	4	3w			
Grygla-----	3	4w			
Seelyeville-----	3	6w			
546-----			---	---	---
Lupton-----	90	7w			
Bullwinkle-----	4	6w			
Dora-----	3	6w			
Tawas-----	3	6w			
547-----			---	---	5.5
Deerwood-----	90	6w			
Markey-----	4	6w			
Rosewood-----	3	3w			
Syrene-----	3	4w			
550-----			---	---	6.0
Dora-----	90	6w			
Boash-----	4	2w			
Seelyeville-----	3	6w			
Woodslake-----	3	3w			
561-----			---	---	6.0
Bullwinkle-----	90	6w			
Lupton-----	4	7w			
Northwood, wooded-----	4	6w			
Chilgren-----	2	2w			
563-----			---	---	5.5
Northwood-----	90	6w			
Grygla-----	4	4w			
Berner-----	3	4w			
Strandquist-----	3	3w			
565-----			4.3	5.0	---
Eckvoll-----	85	3s			
Chilgren-----	5	2w			
Grygla-----	5	4w			
Hiwood-----	5	4s			
568-----			3.0	4.5	5.5
Zippel-----	85	2w			
Augsburg, depressional--	5	6w			
Sago-----	5	6w			
Skime-----	5	4s			
569-----			3.0	4.5	5.5
Wabanica-----	85	2w			
Warroad-----	6	3w			
Sax-----	4	6w			
Grano-----	3	2w			
Enstrom-----	2	4s			
570-----			3.0	3.5	---
Faunce-----	85	4s			
Clearriver-----	7	4s			
Zimmerman-----	4	4s			
Meehan-----	3	4w			
Pits, gravel-----	1	---			

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Map symbol and component name	Percent of map unit	Land capability	Alfalfa hay Tons	Bromegrass- alfalfa AUM*	Reed canarygrass Tons
581-----			3.0	4.5	5.5
Percy-----	90	2w			
Haug-----	5	6w			
Boash-----	3	2w			
Skagen-----	2	2e			
582-----			3.0	4.5	5.5
Roliss-----	85	2w			
Roliss, depressional----	7	6w			
Boash-----	5	2w			
Haug-----	3	6w			
583-----			4.5	6.0	---
Nereson-----	85	1			
Percy-----	10	2w			
Pelan-----	3	3s			
Foxhome-----	2	3s			
627-----			---	---	5.0
Tawas-----	90	6w			
Leafriver-----	4	6w			
Lupton-----	4	7w			
Cormant-----	2	4w			
630-----			---	---	6.0
Wildwood-----	90	6w			
Boash-----	4	2w			
Dora-----	4	6w			
Espelie-----	2	2w			
643-----			4.0	5.5	---
Huot-----	85	2s			
Thiefriver-----	12	2w			
Redby-----	3	3w			
644-----			3.0	4.5	5.5
Boash-----	85	2w			
Percy-----	7	2w			
Woodslake-----	5	3w			
Strandquist-----	3	3w			
645-----			3.0	4.5	4.5
Espelie-----	85	2w			
Grano-----	5	2w			
Hilaire-----	5	2s			
Wildwood-----	5	6w			
651-----			3.0	4.5	4.5
Thiefriver-----	85	2w			
Grano-----	5	2w			
Huot-----	5	2s			
Wildwood-----	5	6w			
708-----			4.0	5.0	---
Rushlake-----	85	4s			
Corliss-----	6	4s			
Redby-----	5	3w			
Hangaard-----	3	4w			
Pits, gravel-----	1	---			

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Map symbol and component name	Percent of map unit	Land capability	Alfalfa hay Tons	Bromegrass- alfalfa AUM*	Reed canarygrass Tons
712-----			3.0	3.5	4.0
Rosewood-----	85	3w			
Deerwood-----	6	6w			
Hangaard-----	5	4w			
Ulen-----	4	3s			
721B-----			3.0	3.5	---
Corliss-----	85	4s			
Rushlake-----	10	4s			
Hangaard-----	4	4w			
Pits, gravel-----	1	---			
733-----			---	---	5.5
Berner-----	90	4w			
Grygla-----	5	4w			
Seelyeville-----	5	6w			
737-----			4.5	6.0	---
Mahkonce-----	85	2s			
Auganaush-----	10	2w			
Eckvoll-----	5	3s			
755-----			---	---	6.0
Woodslake-----	85	3w			
Boash-----	8	2w			
Wildwood-----	5	6w			
Dora-----	2	6w			
767-----			3.0	4.0	5.5
Auganaush-----	90	2w			
Mustinka-----	5	2w			
Wildwood-----	3	6w			
Mahkonce-----	2	2s			
794-----			4.0	5.0	---
Clearriver-----	85	4s			
Hiwood-----	7	4s			
Meehan-----	5	4w			
Faunce-----	3	4s			
1002-----			---	---	4.5
Fluvaquents, frequently flooded-----	90	6w			
Seelyeville-----	6	8w			
Hapludalfs-----	2	6e			
Water-----	2	---			
1030-----			---	---	---
Pits, gravel-----	75	---			
Udipsamments-----	20	8s			
Corliss-----	2	4s			
Karlstad-----	2	3s			
Hangaard-----	1	4w			
1031-----			---	---	---
Seelyeville, ponded-----	90	8w			
Cathro-----	4	6w			
Dora-----	3	6w			
Markey-----	3	6w			

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Map symbol and component name	Percent of map unit	Land capability	Alfalfa hay Tons	Bromegrass- alfalfa AUM*	Reed canarygrass Tons
1067----- Fluvaquents, frequently flooded----- Hapludalfs----- Seelyeville----- Water-----	 60 30 5 5	 6w 6e 8w ---	 --- --- --- ---	 --- --- --- ---	 4.5 --- --- ---
1133B----- Skime----- Hiwood----- Zippel-----	 85 10 5	 4s 4s 2w	 4.2 --- ---	 4.5 --- ---	 --- --- ---
1134----- Borup----- Glyndon----- Augsburg, depressional-- Skime-----	 55 35 5 5	 2w 2s 6w 4s	 3.5 --- --- ---	 4.5 --- --- ---	 --- --- --- ---
1144----- Strathcona, depressional Kratka, depressional---- Kratka----- Northwood-----	 45 45 5 5	 6w 6w 3w 6w	 --- --- --- ---	 --- --- --- ---	 5.0 --- --- ---
1154----- Sax----- Wabanica----- Cathro----- Woodslake-----	 90 5 3 2	 6w 2w 6w 3w	 --- --- --- ---	 --- --- --- ---	 6.0 --- --- ---
1158----- Skagen----- Percy----- Foxhome-----	 85 10 5	 2e 2w 3s	 4.5 --- ---	 6.0 --- ---	 --- --- ---
1170----- Skagen, very cobbly----- Percy, very cobbly----- Foxhome-----	 85 10 5	 3e 3w 3s	 4.5 --- ---	 6.0 --- ---	 --- --- ---
1179B----- Moranville----- Baudette----- Hiwood----- Spoonier-----	 85 5 5 5	 3s 2e 4s 2w	 4.3 --- ---	 5.5 --- ---	 --- --- ---
1181----- Rosewood----- Ulen----- Redby----- Deerwood----- Syrene-----	 50 40 5 3 2	 3w 3s 3w 6w 4w	 3.5 --- ---	 4.0 --- ---	 --- --- ---
1182----- Warroad----- Wabanica----- Enstrom----- Sax-----	 85 7 5 3	 3w 2w 4s 6w	 3.0 --- ---	 4.5 --- ---	 4.5 --- ---

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Map symbol and component name	Percent of map unit	Land capability	Alfalfa hay Tons	Bromegrass- alfalfa AUM*	Reed canarygrass Tons
1187-----			---	---	---
Dora, ponded-----	90	8w			
Seelyeville, ponded-----	4	8w			
Wildwood-----	4	6w			
Boash-----	2	2w			
1191-----			3.0	3.5	4.0
Sahkahtay-----	85	3w			
Cormant-----	5	4w			
Deerwood-----	5	6w			
Karlstad-----	3	3s			
Redby-----	2	3w			
1206-----			3.0	3.0	4.0
Cormant-----	55	4w			
Redby-----	35	3w			
Hiwood-----	5	4s			
Leafriver-----	5	6w			
1214-----			3.0	4.5	6.0
Mustinka-----	90	2w			
Espelie-----	4	2w			
Wildwood-----	4	6w			
Dalbo-----	2	1			
1274B-----			---	---	---
Redby-----	40	3w			
Hiwood-----	30	4s			
Leafriver, wooded-----	15	6w			
Clearriver-----	5	4s			
Cormant-----	5	4w			
Zimmerman-----	5	4s			
1298-----			3.0	4.5	5.5
Borup-----	90	2w			
Augsburg, depressional--	3	6w			
Glyndon-----	3	2s			
Sago-----	2	6w			
Skime-----	2	4s			
1302-----			4.5	5.5	---
Foldahl-----	85	2s			
Kratka-----	10	3w			
Foxhome-----	5	3s			
1304-----			4.0	6.0	---
Glyndon-----	85	2s			
Borup-----	10	2w			
Skime-----	5	4s			
1305-----			4.0	5.5	---
Hilaire-----	85	2s			
Espelie-----	11	2w			
Grano-----	2	2w			
Redby-----	2	3w			
1314-----			---	---	5.5
Tacoosh-----	90	6w			
Rifle-----	8	6w			
Sax-----	2	6w			

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Map symbol and component name	Percent of map unit	Land capability	Alfalfa hay Tons	Bromegrass- alfalfa AUM*	Reed canarygrass Tons
1316-----			4.0	6.0	---
Wheatville-----	85	2s			
Augsburg-----	13	2w			
Grano-----	2	2w			
1326-----			---	---	5.5
Augsburg, depressional--	45	6w			
Wabanica, depressional--	45	6w			
Sax-----	6	6w			
Espelie-----	2	2w			
Zippel-----	2	2w			
1327B-----			3.5	4.5	---
Karlstad-----	65	3s			
Marquette-----	25	4s			
Sahkahtay-----	7	3w			
Redby-----	3	3w			
1328-----			---	---	5.5
Northwood, wooded-----	90	6w			
Berner, wooded-----	5	6w			
Grygla-----	5	4w			
1333-----			---	---	6.0
Dora, wooded-----	90	6w			
Lupton-----	4	7w			
Wildwood-----	4	6w			
Auganaush-----	2	2w			
1356. Water, miscellaneous					
1399B-----			3.0	3.5	---
Two Inlets-----	85	4s			
Wurtsmith-----	6	4s			
Zimmerman-----	6	4s			
Meehan-----	3	4w			
1401-----			---	---	5.5
Grygla, depressional----	90	6w			
Northwood, wooded-----	5	6w			
Chilgren-----	3	2w			
Grygla-----	2	4w			
1402-----			---	---	5.0
Leafriver, wooded-----	90	6w			
Cormant-----	4	4w			
Tawas-----	4	6w			
Redby-----	2	3w			
1404-----			---	---	5.5
Berner, wooded-----	90	6w			
Lupton-----	4	7w			
Northwood, wooded-----	4	6w			
Grygla-----	2	4w			
1405-----			---	---	6.0
Lallie-----	90	8w			
Sax-----	7	6w			
Wabanica-----	3	2w			

See footnote at end of table.

Table 8.--Land Capability and Yields per Acre of Pasture--Continued

Map symbol and component name	Percent of map unit	Land capability	Alfalfa hay	Bromegrass- alfalfa	Reed canarygrass
			Tons	AUM*	Tons
1414-----			4.5	6.0	---
Nereson, very cobbly----	85	3e			
Percy, very cobbly----	10	3w			
Pelan-----	3	3s			
Foxhome-----	2	3s			
1428-----			4.0	5.0	---
Karlsruhe-----	85	4e			
Syrene-----	10	4w			
Ulen-----	5	3s			
1444-----			4.0	4.5	---
Wurtsmith-----	85	4s			
Meehan-----	10	4w			
Clearriver-----	2	4s			
Two Inlets-----	2	4s			
Cormant-----	1	4w			
1448-----			3.0	4.5	6.0
Grano-----	90	2w			
Percy-----	5	2w			
Augsburg-----	3	2w			
Woodslake-----	2	3w			
1449-----			3.0	4.5	6.0
Grano-----	90	2w			
Percy-----	5	2w			
Augsburg-----	3	2w			
Woodslake-----	2	3w			
1807-----			---	---	---
Cathro, ponded-----	90	8w			
Haug-----	4	6w			
Seelyeville, ponded-----	4	8w			
Percy-----	2	3w			
1808-----			---	---	---
Markey, ponded-----	90	8w			
Leafriver-----	4	6w			
Seelyeville, ponded-----	4	8w			
Cormant-----	2	4w			
1918-----			4.2	5.0	---
Croke-----	85	1			
Augsburg-----	13	2w			
Grano-----	2	2w			
1923B-----			---	5.0	---
Garnes, very stony-----	85	2e			
Chilgren-----	10	2w			
Eckvoll-----	3	3s			
Pelan-----	2	3s			
1984-----			---	---	5.0
Leafriver-----	90	6w			
Cormant-----	5	4w			
Markey-----	3	6w			
Redby-----	2	3w			
W. Water					

* Animal unit month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Table 9.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name.)

Map symbol	Soil name
47	Colvin silty clay loam, 0 to 2 percent slopes (where drained)
52	Augsburg loam, 0 to 2 percent slopes (where drained)
59	Grimstad fine sandy loam, 0 to 3 percent slopes
67	Bearden silt loam, 0 to 2 percent slopes
77	Garnes fine sandy loam, 0 to 3 percent slopes
133	Dalbo loam, 0 to 3 percent slopes
147	Spooner very fine sandy loam, 0 to 2 percent slopes (where drained)
167B	Baudette fine sandy loam, 1 to 6 percent slopes
383	Percy loam, 0 to 2 percent slopes (where drained)
404	Chilgren fine sandy loam, 0 to 2 percent slopes (where drained)
439	Strathcona fine sandy loam, 0 to 2 percent slopes (where drained)
481	Kratka fine sandy loam, 0 to 2 percent slopes (where drained)
568	Zippel very fine sandy loam, 0 to 2 percent slopes (where drained)
569	Wabanica silt loam, 0 to 2 percent slopes (where drained)
581	Percy fine sandy loam, 0 to 1 percent slopes (where drained)
582	Roliss loam, 0 to 2 percent slopes (where drained)
583	Nereson fine sandy loam, 0 to 3 percent slopes
643	Huot fine sandy loam, 0 to 3 percent slopes
644	Boash clay loam, 0 to 2 percent slopes (where drained)
645	Espelie fine sandy loam, 0 to 2 percent slopes (where drained)
651	Thiefriever fine sandy loam, 0 to 2 percent slopes (where drained)
737	Mahkonce fine sandy loam, 0 to 3 percent slopes
767	Auganaush loam, 0 to 2 percent slopes (where drained)
1134	Borup-Glyndon complex, 0 to 2 percent slopes (where drained)
1158	Skagen loam, 0 to 3 percent slopes
1182	Warroad fine sandy loam, 0 to 2 percent slopes (where drained)
1214	Mustinka clay loam, 0 to 1 percent slopes (where drained)
1298	Borup silt loam, 0 to 2 percent slopes (where drained)
1302	Foldahl fine sandy loam, 0 to 3 percent slopes
1304	Glyndon very fine sandy loam, 0 to 2 percent slopes
1305	Hilaire fine sandy loam, 0 to 3 percent slopes
1316	Wheatville loam, 0 to 2 percent slopes
1448	Grano clay, MAP 18-22, 0 to 2 percent slopes (where drained)
1449	Grano loam, MAP 18-22, 0 to 2 percent slopes (where drained)
1918	Croke very fine sandy loam, 0 to 2 percent slopes

Table 10.--Windbreaks and Environmental Plantings

(Absence of an entry indicates that trees generally do not grow to the given height.)

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
47:						
Colvin-----	85	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Black Hills spruce, Manchurian crabapple, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Bearden-----	5	Peking cotoneaster, sargent crabapple	American cranberrybush, American plum, common chokecherry, common lilac, silver buffaloberry	Siberian crabapple, eastern redcedar, Black Hills spruce, Manchurian crabapple, white spruce	Common hackberry, golden willow, green ash, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Grano-----	5	Honeysuckle, redosier dogwood	Common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Sax-----	5	---	---	---	---	---
48B:						
Hiwood-----	85	Redosier dogwood, sargent crabapple	Common lilac, late lilac, silver buffaloberry	Siberian crabapple, Manchurian crabapple, Russian- olive	Jack pine, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Redby-----	7	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, Russian-olive	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Clearriver-----	3	Peking cotoneaster, honeysuckle	Common lilac, late lilac, silver buffaloberry	Eastern redcedar, Manchurian crabapple, Scotch pine, ponderosa pine, Russian-olive	Jack pine, eastern white pine, green ash, Siberian elm	Silver maple, eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
48B: Cormant-----	3	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Blue spruce, Manchurian crabapple, black ash, white spruce	Golden willow, white willow	Eastern cottonwood, Siouxland cottonwood
Zimmerman-----	2	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Siberian crabapple, eastern redcedar, Manchurian crabapple, Russian- olive	Jack pine, paper birch, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
52: Augsburg-----	85	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Black Hills spruce, Russian-olive, white spruce	Laurel willow, golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Croke-----	5	Honeysuckle, redosier dogwood	American cranberrybush, common lilac	Eastern redcedar, peashrub, Black Hills spruce, bur oak, white spruce	Eastern white pine, green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Grano-----	5	Honeysuckle, redosier dogwood	Common chokecherry, common lilac	Black Hills spruce, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Sago-----	5	---	---	---	---	---
59: Grimstad-----	85	Nanking cherry, redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, eastern redcedar, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Strathcona-----	12	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, eastern arborvitae, eastern redcedar, white spruce	Golden willow, green ash, Siberian elm	Imperial Carolina poplar, eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
59: Foxhome-----	3	Nanking cherry, Peking cotoneaster	Common chokecherry, common lilac, silver buffaloberry	Siberian crabapple, eastern redcedar, ponderosa pine, Manchurian crabapple, bur oak, Russian-olive	Green ash, Siberian elm	Silver maple, imperial Carolina poplar, eastern cottonwood
64: Ulen-----	85	Nanking cherry, sargent crabapple	Common chokecherry, common lilac	Blue spruce, eastern redcedar, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Rosewood-----	10	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Eastern arborvitae, peashrub, Black Hills spruce, Russian-olive	Golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Redby-----	3	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, Russian-olive	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Rushlake-----	2	Peking cotoneaster, redosier dogwood	American cranberrybush, common lilac	Eastern redcedar, bur oak, white spruce	Norway spruce, jack pine, eastern white pine, green ash, red maple	Silver maple, eastern cottonwood, Siouxland cottonwood
65: Foxhome-----	85	Nanking cherry, Peking cotoneaster	Common chokecherry, common lilac, silver buffaloberry	Siberian crabapple, eastern redcedar, ponderosa pine, Manchurian crabapple, bur oak, Russian-olive	Green ash, Siberian elm	Silver maple, imperial Carolina poplar, eastern cottonwood
Strandquist-----	12	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	American mountainash, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
65: Skagen-----	3	Nanking cherry, sargent crabapple	American plum, common chokecherry, common lilac	Scotch pine, bur oak, Russian-olive	Common hackberry, laurel willow, green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
67: Bearden-----	85	Peking cotoneaster, sargent crabapple	American cranberrybush, American plum, common chokecherry, common lilac, silver buffaloberry	Siberian crabapple, eastern redcedar, Black Hills spruce, Manchurian crabapple, white spruce	Common hackberry, golden willow, green ash, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Colvin-----	15	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Black Hills spruce, Manchurian crabapple, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood
77: Garnes-----	85	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, eastern arborvitae, eastern redcedar, bur oak, white spruce	Norway spruce, paper birch, eastern white pine, green ash, red pine	Eastern cottonwood, Siouxland cottonwood
Chilgren-----	10	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, black ash, white spruce	Paper birch, green ash, white willow	Silver maple, eastern cottonwood
Eckvoll-----	3	Peking cotoneaster, redosier dogwood	American plum, common chokecherry	Blue spruce, eastern redcedar, Manchurian crabapple, Scotch pine, bur oak, white spruce	American basswood, eastern white pine, golden willow	Silver maple, eastern cottonwood
Pelan-----	2	Peking cotoneaster, redosier dogwood	American plum, common chokecherry, hedge cotoneaster, common lilac, silver buffaloberry	Ponderosa pine, Manchurian crabapple, bur oak, Russian-olive	Green ash, Siberian elm	Silver maple, imperial Carolina poplar, eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
111: Hangaard-----	90	Common ninebark, honeysuckle, redosier dogwood	Common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, Russian-olive	Golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood
Deerwood-----	5	---	---	---	---	---
Rushlake-----	3	Peking cotoneaster, redosier dogwood	American cranberrybush, common lilac	Eastern redcedar, bur oak, white spruce	Norway spruce, jack pine, eastern white pine, green ash, red maple	Silver maple, eastern cottonwood, Siouxland cottonwood
Rosewood-----	2	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Eastern arborvitae, peashrub, Black Hills spruce, Russian-olive	Golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
116: Redby-----	85	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, Russian-olive	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Cormant-----	8	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Blue spruce, Manchurian crabapple, black ash, white spruce	Golden willow, white willow	Eastern cottonwood, Siouxland cottonwood
Hiwood-----	6	Redosier dogwood, sargent crabapple	Common lilac, late lilac, silver buffaloberry	Siberian crabapple, Manchurian crabapple, Russian- olive	Jack pine, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Leafriver-----	1	---	---	---	---	---
117: Cormant-----	85	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Blue spruce, Manchurian crabapple, black ash, white spruce	Golden willow, white willow	Eastern cottonwood, Siouxland cottonwood
Leafriver-----	7	---	---	---	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
117: Epoufette-----	3	Common ninebark, redosier dogwood	American plum, common lilac	Blue spruce, eastern arborvitae, Manchurian crabapple, black ash	Golden willow, green ash, white willow	Silver maple, eastern cottonwood
Redby-----	3	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, Russian-olive	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Grygla, depressional----	2	---	---	---	---	---
133: Dalbo-----	85	Peking cotoneaster, redosier dogwood	American cranberrybush, eastern arborvitae, hedge cotoneaster, common lilac	Amur maple, Manchurian crabapple, bur oak, white spruce	Eastern white pine, green ash	Silver maple, imperial Carolina poplar, eastern cottonwood
Mustinka-----	10	Nanking cherry, redosier dogwood	American plum, common chokecherry	Siberian crabapple, eastern arborvitae, peashrub, Black Hills spruce, Manchurian crabapple, Russian- olive	Golden willow, green ash, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Moranville-----	5	Peking cotoneaster, redosier dogwood	Common chokecherry, hedge cotoneaster, common lilac	Amur maple, Black Hills spruce, Scotch pine, bur oak, white spruce	Norway spruce, paper birch, eastern white pine, red pine	Silver maple, eastern cottonwood
145: Enstrom-----	85	Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry	Blue spruce, eastern redcedar, Manchurian crabapple, bur oak, white spruce	Jack pine, paper birch, golden willow	Eastern cottonwood, Siouxland cottonwood
Grygla-----	10	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, Black Hills spruce, black ash, white spruce	Paper birch, green ash	Silver maple, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
145: Redby-----	4	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, Russian-olive	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Pelan-----	1	Peking cotoneaster, redosier dogwood	American plum, common chokecherry, hedge cotoneaster, common lilac, silver buffaloberry	Ponderosa pine, Manchurian crabapple, bur oak, Russian-olive	Green ash, Siberian elm	Silver maple, imperial Carolina poplar, eastern cottonwood
147: Spooner-----	85	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, common lilac	Blue spruce, eastern arborvitae, black ash, white spruce	Norway spruce, golden willow, green ash	Silver maple, Siouxland cottonwood
Baudette-----	5	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, common lilac	Amur maple, blue spruce, eastern arborvitae, Manchurian crabapple, Scotch pine, bur oak, white spruce	Eastern white pine, green ash, red pine	Eastern cottonwood, Siouxland cottonwood
Grygla-----	5	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, Black Hills spruce, black ash, white spruce	Paper birch, green ash	Silver maple, Siouxland cottonwood
Sago-----	5	---	---	---	---	---
158B: Zimmerman-----	85	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Siberian crabapple, eastern redcedar, Manchurian crabapple, Russian- olive	Jack pine, paper birch, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Hiwood-----	6	Redosier dogwood, sargent crabapple	Common lilac, late lilac, silver buffaloberry	Siberian crabapple, Manchurian crabapple, Russian- olive	Jack pine, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
158B: Two Inlets-----	6	Peking cotoneaster, honeysuckle	Common lilac, silver buffaloberry	Blue spruce, eastern redcedar, bur oak	Jack pine, eastern white pine, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Redby-----	3	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, Russian-olive	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
167B: Baudette-----	85	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, common lilac	Amur maple, blue spruce, eastern arborvitae, Manchurian crabapple, Scotch pine, bur oak, white spruce	Eastern white pine, green ash, red pine	Eastern cottonwood, Siouxland cottonwood
Spooner-----	10	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, common lilac	Blue spruce, eastern arborvitae, black ash, white spruce	Norway spruce, golden willow, green ash	Silver maple, Siouxland cottonwood
Moranville-----	5	Peking cotoneaster, redosier dogwood	Common chokecherry, hedge cotoneaster, common lilac	Amur maple, Black Hills spruce, bur oak, white spruce	Norway spruce, paper birch, eastern white pine, red pine	Silver maple, eastern cottonwood
187: Haug-----	90	---	---	---	---	---
Percy-----	5	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Cathro-----	3	---	---	---	---	---
Boash-----	2	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common chokecherry, common lilac	Eastern arborvitae, Manchurian crabapple, European larch	Siberian elm, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
191: Epoufette-----	85	Common ninebark, redosier dogwood	American plum, common lilac	Blue spruce, eastern arborvitae, Manchurian crabapple, black ash	Golden willow, green ash, white willow	Silver maple, eastern cottonwood
Cormant-----	5	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Blue spruce, Manchurian crabapple, black ash, white spruce	Golden willow, white willow	Eastern cottonwood, Siouxland cottonwood
Leafriver-----	5	---	---	---	---	---
Meehan-----	5	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common lilac	Blue spruce, eastern redcedar, Scotch pine, white spruce	Norway spruce, jack pine, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, Siouxland cottonwood
202: Meehan-----	85	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common lilac	Blue spruce, eastern redcedar, Scotch pine, white spruce	Norway spruce, jack pine, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, Siouxland cottonwood
Cormant-----	8	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Blue spruce, Manchurian crabapple, black ash, white spruce	Golden willow, white willow	Eastern cottonwood, Siouxland cottonwood
Wurtsmith-----	5	Redosier dogwood, sargent crabapple	American plum, common lilac	Siberian crabapple, eastern redcedar, Manchurian crabapple	Jack pine, paper birch, eastern white pine, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Leafriver-----	2	---	---	---	---	---
205: Karlstad-----	85	Nanking cherry, Peking cotoneaster	Common chokecherry, common lilac	Blue spruce, eastern redcedar, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
205:						
Sahkahtay-----	7	Honeysuckle, redosier dogwood	American plum, common chokecherry, common lilac	Amur maple, eastern arborvitae, Black Hills spruce, black ash, white spruce	Common hackberry, paper birch, golden willow, green ash	Silver maple, eastern cottonwood
Marquette-----	5	Golden currant, sargent crabapple	Common chokecherry, common lilac, silver buffaloberry	Blue spruce, eastern redcedar, bur oak, Russian-olive	Jack pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Redby-----	2	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, Russian-olive	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Pits, gravel-----	1	---	---	---	---	---
242B:						
Marquette-----	85	Golden currant, sargent crabapple	Common chokecherry, common lilac, silver buffaloberry	Blue spruce, eastern redcedar, bur oak, Russian-olive	Jack pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Karlstad-----	14	Nanking cherry, Peking cotoneaster	Common chokecherry, common lilac	Blue spruce, eastern redcedar, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Pits, gravel-----	1	---	---	---	---	---
280:						
Pelan-----	85	Peking cotoneaster, redosier dogwood	American plum, common chokecherry, hedge cotoneaster, common lilac, silver buffaloberry	Ponderosa pine, Manchurian crabapple, bur oak, Russian-olive	Green ash, Siberian elm	Silver maple, imperial Carolina poplar, eastern cottonwood
Strandquist-----	10	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	American mountainash, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
280: Garnes-----	3	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, eastern arborvitae, eastern redcedar, bur oak, white spruce	Norway spruce, paper birch, eastern white pine, green ash, red pine	Eastern cottonwood, Siouxland cottonwood
Marquette-----	1	Golden currant, sargent crabapple	Common chokecherry, common lilac, silver buffaloberry	Blue spruce, eastern redcedar, bur oak, Russian-olive	Jack pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Pits, gravel-----	1	---	---	---	---	---
379: Percy, very cobbly-----	90	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Boash-----	3	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common chokecherry, common lilac	Eastern arborvitae, Manchurian crabapple, European larch	Siberian elm, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood
Strandquist-----	3	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	American mountainash, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Haug-----	2	---	---	---	---	---
Skagen, very cobbly-----	2	Nanking cherry, sargent crabapple	American plum, common chokecherry, common lilac	Scotch pine, bur oak, Russian-olive	Common hackberry, laurel willow, green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
383: Percy-----	90	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
383: Boash-----	3	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common chokecherry, common lilac	Eastern arborvitae, Manchurian crabapple, European larch	Siberian elm, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood
Strandquist-----	3	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	American mountainash, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Haug-----	2	---	---	---	---	---
Skagen-----	2	Nanking cherry, sargent crabapple	American plum, common chokecherry, common lilac	Scotch pine, bur oak, Russian-olive	Common hackberry, laurel willow, green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
384: Percy, depressional----	85	---	---	---	---	---
Haug-----	7	---	---	---	---	---
Percy-----	5	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Boash-----	3	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common chokecherry, common lilac	Eastern arborvitae, Manchurian crabapple, European larch	Siberian elm, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood
387: Roliss, depressional----	85	---	---	---	---	---
Haug-----	10	---	---	---	---	---
Roliss-----	5	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, bur oak, Russian- olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
404: Chilgren-----	85	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, black ash, white spruce	Paper birch, green ash, white willow	Silver maple, eastern cottonwood
Garnes-----	5	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, eastern arborvitae, eastern redcedar, bur oak, white spruce	Norway spruce, paper birch, eastern white pine, green ash, red pine	Eastern cottonwood, Siouxland cottonwood
Grygla-----	5	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, Black Hills spruce, black ash, white spruce	Paper birch, green ash	Silver maple, Siouxland cottonwood
Haug-----	5	---	---	---	---	---
412: Mavie-----	85	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	American mountainash, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Foxhome-----	5	Nanking cherry, Peking cotoneaster	Common chokecherry, common lilac, silver buffaloberry	Siberian crabapple, eastern redcedar, ponderosa pine, Manchurian crabapple, bur oak, Russian-olive	Green ash, Siberian elm	Silver maple, imperial Carolina poplar, eastern cottonwood
Northwood-----	5	---	---	---	---	---
Percy, very cobbly-----	5	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
432: Strandquist-----	85	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	American mountainash, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
432: Percy, very cobbly-----	5	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Haug-----	4	---	---	---	---	---
Boash-----	3	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common chokecherry, common lilac	Eastern arborvitae, Manchurian crabapple, European larch	Siberian elm, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood
Foxhome-----	3	Nanking cherry, Peking cotoneaster	Common chokecherry, common lilac, silver buffaloberry	Siberian crabapple, eastern redcedar, ponderosa pine, Manchurian crabapple, bur oak, Russian-olive	Green ash, Siberian elm	Silver maple, imperial Carolina poplar, eastern cottonwood
433: Syrene, depressional----	85	---	---	---	---	---
Deerwood-----	5	---	---	---	---	---
Rosewood-----	5	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Eastern arborvitae, peashrub, Black Hills spruce, Russian-olive	Golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Syrene-----	5	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Eastern redcedar, Black Hills spruce, bur oak, Russian- olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
435: Syrene-----	85	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Eastern redcedar, Black Hills spruce, bur oak, Russian- olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
435: Rosewood-----	5	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Eastern arborvitae, peashrub, Black Hills spruce, Russian-olive	Golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Syrene, depressional----	5	---	---	---	---	---
Karlsruhe-----	3	Nanking cherry, Peking cotoneaster, common chokecherry, redosier dogwood	American cranberrybush, American plum	Eastern redcedar, ponderosa pine, Black Hills spruce, bur oak	Common hackberry, laurel willow, golden willow, green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Deerwood-----	2	---	---	---	---	---
439: Strathcona-----	85	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, eastern arborvitae, eastern redcedar, white spruce	Golden willow, green ash, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Northwood-----	5	---	---	---	---	---
Percy-----	5	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Grimstad-----	3	Nanking cherry, redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, eastern redcedar, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Strandquist-----	2	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	American mountainash, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
481: Kratka-----	85	Nanking cherry, Peking cotoneaster	Common chokecherry, common lilac	Blue spruce, eastern redcedar, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Northwood-----	5	---	---	---	---	---
Percy-----	5	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Enstrom-----	3	Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry	Blue spruce, eastern redcedar, Manchurian crabapple, bur oak, white spruce	Jack pine, paper birch, golden willow	Eastern cottonwood, Siouxland cottonwood
Strandquist-----	2	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	American mountainash, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
482: Grygla-----	85	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, Black Hills spruce, black ash, white spruce	Paper birch, green ash	Silver maple, Siouxland cottonwood
Chilgren-----	5	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, black ash, white spruce	Paper birch, green ash, white willow	Silver maple, eastern cottonwood
Grygla, depressional----	5	---	---	---	---	---
Enstrom-----	3	Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry	Blue spruce, eastern redcedar, Manchurian crabapple, bur oak, white spruce	Jack pine, paper birch, golden willow	Eastern cottonwood, Siouxland cottonwood
Northwood-----	2	---	---	---	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
532:						
Sago-----	90	---	---	---	---	---
Cathro-----	5	---	---	---	---	---
Zippel-----	5	Redosier dogwood, sargent crabapple	American plum, common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, white spruce	Common hackberry, golden willow, green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
534:						
Mooselake-----	90	---	---	---	---	---
Bullwinkle-----	4	---	---	---	---	---
Dora-----	3	---	---	---	---	---
Tawas-----	3	---	---	---	---	---
540:						
Seelyeville-----	90	---	---	---	---	---
Cathro-----	4	---	---	---	---	---
Dora-----	3	---	---	---	---	---
Markey-----	3	---	---	---	---	---
541:						
Rifle-----	90	---	---	---	---	---
Tacoosh-----	10	---	---	---	---	---
543:						
Markey-----	90	---	---	---	---	---
Cormant-----	5	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Blue spruce, Manchurian crabapple, black ash, white spruce	Golden willow, white willow	Eastern cottonwood, Siouxland cottonwood
Seelyeville-----	5	---	---	---	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
544:						
Cathro-----	90	---	---	---	---	---
Percy, very cobbly-----	4	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Grygla-----	3	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, Black Hills spruce, black ash, white spruce	Paper birch, green ash	Silver maple, Siouxland cottonwood
Seelyeville-----	3	---	---	---	---	---
546:						
Lupton-----	90	---	---	---	---	---
Bullwinkle-----	4	---	---	---	---	---
Dora-----	3	---	---	---	---	---
Tawas-----	3	---	---	---	---	---
547:						
Deerwood-----	90	---	---	---	---	---
Markey-----	4	---	---	---	---	---
Rosewood-----	3	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Eastern arborvitae, peashrub, Black Hills spruce, Russian-olive	Golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Syrene-----	3	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Eastern redcedar, Black Hills spruce, bur oak, Russian- olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
550:						
Dora-----	90	---	---	---	---	---
Boash-----	4	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common chokecherry, common lilac	Eastern arborvitae, Manchurian crabapple, European larch	Siberian elm, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood
Seelyeville-----	3	---	---	---	---	---
Woodslake-----	3	---	---	---	---	---
561:						
Bullwinkle-----	90	---	---	---	---	---
Lupton-----	4	---	---	---	---	---
Northwood, wooded-----	4	---	---	---	---	---
Chilgren-----	2	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, black ash, white spruce	Paper birch, green ash, white willow	Silver maple, eastern cottonwood
563:						
Northwood-----	90	---	---	---	---	---
Grygla-----	4	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, Black Hills spruce, black ash, white spruce	Paper birch, green ash	Silver maple, Siouxland cottonwood
Berner-----	3	---	---	---	---	---
Strandquist-----	3	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	American mountainash, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
565:						
Eckvoll-----	85	Peking cotoneaster, redosier dogwood	American plum, common chokecherry	Blue spruce, eastern redcedar, Manchurian crabapple, Scotch pine, bur oak, white spruce	American basswood, eastern white pine, golden willow	Silver maple, eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
565: Chilgren-----	5	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, black ash, white spruce	Paper birch, green ash, white willow	Silver maple, eastern cottonwood
Grygla-----	5	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, Black Hills spruce, black ash, white spruce	Paper birch, green ash	Silver maple, Siouxland cottonwood
Hiwood-----	5	Redosier dogwood, sargent crabapple	Common lilac, late lilac, silver buffaloberry	Siberian crabapple, Manchurian crabapple, Russian- olive	Jack pine, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
568: Zippel-----	85	Redosier dogwood, sargent crabapple	American plum, common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, white spruce	Common hackberry, golden willow, green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Augsburg, depressional--	5	---	---	---	---	---
Sago-----	5	---	---	---	---	---
Skime-----	5	Peking cotoneaster, sargent crabapple	Common chokecherry, common lilac	Black Hills spruce, Siberian crabapple, Manchurian crabapple, Scotch pine, Russian- olive, white spruce	Jack pine, eastern white pine, green ash, Siberian elm	Eastern cottonwood, Siouxland cottonwood
569: Wabanica-----	85	Honeysuckle, redosier dogwood	Common chokecherry, common lilac	Peashrub, Black Hills spruce, Manchurian crabapple, black ash, Russian-olive	Golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Warroad-----	6	Nanking cherry, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, peashrub, Black Hills spruce, black ash, white spruce	Common hackberry, golden willow, green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
Sax-----	4	---	---	---	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
569: Grano-----	3	Honeysuckle, redosier dogwood	Common chokecherry, common lilac	Black Hills spruce, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Enstrom-----	2	Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry	Blue spruce, eastern redcedar, Manchurian crabapple, bur oak, white spruce	Jack pine, paper birch, golden willow	Eastern cottonwood, Siouxland cottonwood
570: Faunce-----	85	Honeysuckle, sargent crabapple	Common chokecherry, common lilac, silver buffaloberry	Blue spruce, Manchurian crabapple, bur oak, Russian-olive, white spruce	Jack pine, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Clearriver-----	7	Peking cotoneaster, honeysuckle	Common lilac, late lilac, silver buffaloberry	Eastern redcedar, Manchurian crabapple, Scotch pine, ponderosa pine, Russian-olive	Jack pine, eastern white pine, green ash, Siberian elm	Silver maple, eastern cottonwood
Zimmerman-----	4	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Siberian crabapple, eastern redcedar, Manchurian crabapple, Russian- olive	Jack pine, paper birch, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Meehan-----	3	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common lilac	Blue spruce, eastern redcedar, Scotch pine, white spruce	Norway spruce, jack pine, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, Siouxland cottonwood
Pits, gravel-----	1	---	---	---	---	---
581: Percy-----	90	Honeysuckle, redosier dogwood	Common chokecherry, common lilac	Bur oak, Russian- olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Haug-----	5	---	---	---	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
581: Boash-----	3	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common chokecherry, common lilac	Eastern arborvitae, Manchurian crabapple, European larch	Siberian elm, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood
Skagen-----	2	Nanking cherry, sargent crabapple	American plum, common chokecherry, common lilac	Scotch pine, bur oak, Russian-olive	Common hackberry, laurel willow, green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
582: Roliss-----	85	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, bur oak, Russian- olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Roliss, depressional----	7	---	---	---	---	---
Boash-----	5	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common chokecherry, common lilac	Eastern arborvitae, Manchurian crabapple, European larch	Siberian elm, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood
Haug-----	3	---	---	---	---	---
583: Nereson-----	85	Peking cotoneaster, redosier dogwood	Common chokecherry, common lilac	Blue spruce, eastern redcedar, Scotch pine, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Silver maple, imperial Carolina poplar, eastern cottonwood
Percy-----	10	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Pelan-----	3	Peking cotoneaster, redosier dogwood	American plum, common chokecherry, hedge cotoneaster, common lilac, silver buffaloberry	Ponderosa pine, Manchurian crabapple, bur oak, Russian-olive	Green ash, Siberian elm	Silver maple, imperial Carolina poplar, eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
583: Foxhome-----	2	Nanking cherry, Peking cotoneaster	Common chokecherry, common lilac, silver buffaloberry	Siberian crabapple, eastern redcedar, ponderosa pine, Manchurian crabapple, bur oak, Russian-olive	Green ash, Siberian elm	Silver maple, imperial Carolina poplar, eastern cottonwood
627: Tawas-----	90	---	---	---	---	---
Leafriver-----	4	---	---	---	---	---
Lupton-----	4	---	---	---	---	---
Cormant-----	2	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Blue spruce, Manchurian crabapple, black ash, white spruce	Golden willow, white willow	Eastern cottonwood, Siouxland cottonwood
630: Wildwood-----	90	---	---	---	---	---
Boash-----	4	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common chokecherry, common lilac	Eastern arborvitae, Manchurian crabapple, European larch	Siberian elm, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood
Dora-----	4	---	---	---	---	---
Espelie-----	2	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, Manchurian crabapple	Golden willow, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood
643: Huot-----	85	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, eastern redcedar, bur oak, Russian-olive, white spruce	Common hackberry, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Thiefriver-----	12	Nanking cherry, redosier dogwood	Common chokecherry, common lilac	Eastern arborvitae, peashrub, Black Hills spruce, Russian-olive	Golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
643: Redby-----	3	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, Russian-olive	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
644: Boash-----	85	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common chokecherry, common lilac	Eastern arborvitae, Manchurian crabapple, European larch	Siberian elm, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood
Percy-----	7	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Woodslake-----	5	---	---	---	---	---
Strandquist-----	3	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	American mountainash, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
645: Espelie-----	85	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, Manchurian crabapple	Golden willow, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood
Grano-----	5	Honeysuckle, redosier dogwood	Common chokecherry, common lilac	Black Hills spruce, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Hilaire-----	5	Peking cotoneaster, redosier dogwood	American plum, common chokecherry	Black Hills spruce, Manchurian crabapple, Scotch pine, white spruce	Norway spruce, golden willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Wildwood-----	5	---	---	---	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
651:						
Thiefriver-----	85	Nanking cherry, redosier dogwood	Common chokecherry, common lilac	Eastern arborvitae, peashrub, Black Hills spruce, Russian-olive	Golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Grano-----	5	Honeysuckle, redosier dogwood	Common chokecherry, common lilac	Black Hills spruce, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Huot-----	5	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, eastern redcedar, bur oak, Russian-olive, white spruce	Common hackberry, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Wildwood-----	5	---	---	---	---	---
708:						
Rushlake-----	85	Peking cotoneaster, redosier dogwood	American cranberrybush, common lilac	Eastern redcedar, bur oak, white spruce	Norway spruce, jack pine, eastern white pine, green ash, red maple	Silver maple, eastern cottonwood, Siouxland cottonwood
Corliss-----	6	Honeysuckle, sargent crabapple	Common chokecherry, common lilac	Eastern redcedar, ponderosa pine, Black Hills spruce, Scotch pine, Russian-olive	Jack pine, eastern white pine, green ash, Siberian elm	Silver maple, eastern cottonwood
Redby-----	5	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, Russian-olive	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Hangaard-----	3	Common ninebark, honeysuckle, redosier dogwood	Common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, Russian-olive	Golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood
Pits, gravel-----	1	---	---	---	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
712:						
Rosewood-----	85	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Eastern arborvitae, peashrub, Black Hills spruce, Russian-olive	Golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Deerwood-----	6	---	---	---	---	---
Hangaard-----	5	Common ninebark, honeysuckle, redosier dogwood	Common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, Russian-olive	Golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood
Ulen-----	4	Nanking cherry, sargent crabapple	Common chokecherry, common lilac	Blue spruce, eastern redcedar, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
721B:						
Corliss-----	85	Honeysuckle, sargent crabapple	Common chokecherry, common lilac	Eastern redcedar, ponderosa pine, Black Hills spruce, Scotch pine, Russian-olive	Jack pine, eastern white pine, green ash, Siberian elm	Silver maple, eastern cottonwood
Rushlake-----	10	Peking cotoneaster, redosier dogwood	American cranberrybush, common lilac	Eastern redcedar, bur oak, white spruce	Norway spruce, jack pine, eastern white pine, green ash, red maple	Silver maple, eastern cottonwood, Siouxland cottonwood
Hangaard-----	4	Common ninebark, honeysuckle, redosier dogwood	Common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, Russian-olive	Golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood
Pits, gravel-----	1	---	---	---	---	---
733:						
Berner-----	90	---	---	---	---	---
Grygla-----	5	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, Black Hills spruce, black ash, white spruce	Paper birch, green ash	Silver maple, Siouxland cottonwood
Seelyeville-----	5	---	---	---	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
737:						
Mahkonce-----	85	Honeysuckle, redosier dogwood	American plum, common chokecherry, hedge cotoneaster, common lilac, late lilac	Amur maple, Black Hills spruce, Scotch pine, bur oak, Russian-olive, white spruce	Eastern white pine, green ash, red pine	Silver maple, eastern cottonwood
Auganaush-----	10	Nanking cherry, Peking cotoneaster, common ninebark	Common chokecherry, silver buffaloberry	Amur maple, eastern arborvitae, Black Hills spruce, black ash, Russian-olive, white spruce	Golden willow, green ash	Silver maple, eastern cottonwood
Eckvoll-----	5	Peking cotoneaster, redosier dogwood	American plum, common chokecherry	Blue spruce, eastern redcedar, Manchurian crabapple, Scotch pine, bur oak, white spruce	American basswood, eastern white pine, golden willow	Silver maple, eastern cottonwood
755:						
Woodslake-----	85	---	---	---	---	---
Boash-----	8	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common chokecherry, common lilac	Eastern arborvitae, Manchurian crabapple, European larch	Siberian elm, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood
Wildwood-----	5	---	---	---	---	---
Dora-----	2	---	---	---	---	---
767:						
Auganaush-----	90	Nanking cherry, Peking cotoneaster, common ninebark	Common chokecherry, silver buffaloberry	Amur maple, eastern arborvitae, Black Hills spruce, black ash, Russian-olive, white spruce	Golden willow, green ash	Silver maple, eastern cottonwood
Mustinka-----	5	Nanking cherry, redosier dogwood	American plum, common chokecherry	Siberian crabapple, eastern arborvitae, peashrub, Black Hills spruce, Manchurian crabapple, Russian- olive	Golden willow, green ash, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Wildwood-----	3	---	---	---	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
767: Mahkonce-----	2	Honeysuckle, redosier dogwood	American plum, common chokecherry, hedge cotoneaster, common lilac, late lilac	Amur maple, Black Hills spruce, Scotch pine, bur oak, Russian-olive, white spruce	Eastern white pine, green ash, red pine	Silver maple, eastern cottonwood
794: Clearriver-----	85	Peking cotoneaster, honeysuckle	Common lilac, late lilac, silver buffaloberry	Eastern redcedar, Manchurian crabapple, Scotch pine, ponderosa pine, Russian-olive	Jack pine, eastern white pine, green ash, Siberian elm	Silver maple, eastern cottonwood
Hiwood-----	7	Redosier dogwood, sargent crabapple	Common lilac, late lilac, silver buffaloberry	Siberian crabapple, Manchurian crabapple, Russian- olive	Jack pine, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Meehan-----	5	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common lilac	Blue spruce, eastern redcedar, Scotch pine, white spruce	Norway spruce, jack pine, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, Siouland cottonwood
Faunce-----	3	Honeysuckle, sargent crabapple	Common chokecherry, common lilac, silver buffaloberry	Blue spruce, Manchurian crabapple, bur oak, Russian-olive, white spruce	Jack pine, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
1002: Fluvaquents, frequently flooded-----	90	---	---	---	---	---
Seelyeville-----	6	---	---	---	---	---
Hapludalfs-----	2	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common lilac	Manchurian crabapple, red pine, white spruce	Paper birch, eastern white pine, green ash	Silver maple, eastern cottonwood, Siouland cottonwood
Water-----	2	---	---	---	---	---
1030: Pits, gravel-----	75	---	---	---	---	---
Udipsamments-----	20	---	---	---	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1030:						
Corliss-----	2	Honeysuckle, sargent crabapple	Common chokecherry, common lilac	Eastern redcedar, ponderosa pine, Black Hills spruce, Scotch pine, Russian-olive	Jack pine, eastern white pine, green ash, Siberian elm	Silver maple, eastern cottonwood
Karlstad-----	2	Nanking cherry, Peking cotoneaster	Common chokecherry, common lilac	Blue spruce, eastern redcedar, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Hangaard-----	1	Common ninebark, honeysuckle, redosier dogwood	Common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, Russian-olive	Golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood
1031:						
Seelyeville, ponded----	90	---	---	---	---	---
Cathro-----	4	---	---	---	---	---
Dora-----	3	---	---	---	---	---
Markey-----	3	---	---	---	---	---
1067:						
Fluvaquents, frequently flooded-----	60	---	---	---	---	---
Hapludalfs-----	30	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common lilac	Manchurian crabapple, red pine, white spruce	Paper birch, eastern white pine, green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
Seelyeville-----	5	---	---	---	---	---
Water-----	5	---	---	---	---	---
1133B:						
Skime-----	85	Peking cotoneaster, sargent crabapple	Common chokecherry, common lilac	Black Hills spruce, Siberian crabapple, Manchurian crabapple, Scotch pine, Russian- olive, white spruce	Jack pine, eastern white pine, green ash, Siberian elm	Eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1133B: Hiwood-----	10	Redosier dogwood, sargent crabapple	Common lilac, late lilac, silver buffaloberry	Siberian crabapple, Manchurian crabapple, Russian- olive	Jack pine, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Zippel-----	5	Redosier dogwood, sargent crabapple	American plum, common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, white spruce	Common hackberry, golden willow, green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
1134: Borup-----	55	Honeysuckle, redosier dogwood	Common chokecherry, common lilac	Eastern arborvitae, peashrub, Black Hills spruce, Russian-olive	Golden willow, green ash, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Glyndon-----	35	Peking cotoneaster, honeysuckle	American plum, common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Augsburg, depressional--	5	---	---	---	---	---
Skime-----	5	Peking cotoneaster, sargent crabapple	Common chokecherry, common lilac	Black Hills spruce, Siberian crabapple, Manchurian crabapple, Scotch pine, Russian- olive, white spruce	Jack pine, eastern white pine, green ash, Siberian elm	Eastern cottonwood, Siouxland cottonwood
1144: Strathcona, depressional	45	---	---	---	---	---
Kratka, depressional----	45	---	---	---	---	---
Kratka-----	5	Nanking cherry, Peking cotoneaster	Common chokecherry, common lilac	Blue spruce, eastern redcedar, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Northwood-----	5	---	---	---	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1154: Sax-----	90	---	---	---	---	---
Wabanica-----	5	Honeysuckle, redosier dogwood	Common chokecherry, common lilac	Peashrub, Black Hills spruce, Manchurian crabapple, black ash, Russian-olive	Golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Cathro-----	3	---	---	---	---	---
Woodslake-----	2	---	---	---	---	---
1158: Skagen-----	85	Nanking cherry, sargent crabapple	American plum, common chokecherry, common lilac	Scotch pine, bur oak, Russian-olive	Common hackberry, laurel willow, green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Percy-----	10	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Foxhome-----	5	Nanking cherry, Peking cotoneaster	Common chokecherry, common lilac, silver buffaloberry	Siberian crabapple, eastern redcedar, ponderosa pine, Manchurian crabapple, bur oak, Russian-olive	Green ash, Siberian elm	Silver maple, imperial Carolina poplar, eastern cottonwood
1170: Skagen, very cobbly----	85	Nanking cherry, sargent crabapple	American plum, common chokecherry, common lilac	Scotch pine, bur oak, Russian-olive	Common hackberry, laurel willow, green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Percy, very cobbly-----	10	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1170: Foxhome-----	5	Nanking cherry, Peking cotoneaster	Common chokecherry, common lilac, silver buffaloberry	Siberian crabapple, eastern redcedar, ponderosa pine, Manchurian crabapple, bur oak, Russian-olive	Green ash, Siberian elm	Silver maple, imperial Carolina poplar, eastern cottonwood
1179B: Moranville-----	85	Peking cotoneaster, redosier dogwood	Common chokecherry, hedge cotoneaster, common lilac	Amur maple, Black Hills spruce, Scotch pine, bur oak, white spruce	Norway spruce, paper birch, eastern white pine, red pine	Silver maple, eastern cottonwood
Baudette-----	5	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, common lilac	Amur maple, blue spruce, eastern arborvitae, Manchurian crabapple, Scotch pine, bur oak, white spruce	Eastern white pine, green ash, red pine	Eastern cottonwood, Siouxland cottonwood
Hiwood-----	5	Redosier dogwood, sargent crabapple	Common lilac, late lilac, silver buffaloberry	Siberian crabapple, Manchurian crabapple, Russian- olive	Jack pine, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Spooner-----	5	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, common lilac	Blue spruce, eastern arborvitae, black ash, white spruce	Norway spruce, golden willow, green ash	Silver maple, Siouxland cottonwood
1181: Rosewood-----	50	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Eastern arborvitae, peashrub, Black Hills spruce, Russian-olive	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Ulen-----	40	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, eastern redcedar, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1181: Redby-----	5	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, Russian-olive	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Deerwood-----	3	---	---	---	---	---
Syrene-----	2	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Eastern redcedar, Black Hills spruce, bur oak, Russian- olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
1182: Warroad-----	85	Nanking cherry, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, peashrub, Black Hills spruce, black ash, white spruce	Common hackberry, golden willow, green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
Wabanica-----	7	Honeysuckle, redosier dogwood	Common chokecherry, common lilac	Peashrub, Black Hills spruce, Manchurian crabapple, black ash, Russian-olive	Golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Enstrom-----	5	Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry	Blue spruce, eastern redcedar, Manchurian crabapple, bur oak, white spruce	Jack pine, paper birch, golden willow	Eastern cottonwood, Siouxland cottonwood
Sax-----	3	---	---	---	---	---
1187: Dora, ponded-----	90	---	---	---	---	---
Seelyeville, ponded----	4	---	---	---	---	---
Wildwood-----	4	---	---	---	---	---
Boash-----	2	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common chokecherry, common lilac	Eastern arborvitae, Manchurian crabapple, European larch	Siberian elm, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1191: Sahkahtay-----	85	Honeysuckle, redosier dogwood	American plum, common chokecherry, common lilac	Amur maple, eastern arborvitae, Black Hills spruce, black ash, white spruce	Common hackberry, paper birch, golden willow, green ash	Silver maple, eastern cottonwood
Cormant-----	5	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Blue spruce, Manchurian crabapple, black ash, white spruce	Golden willow, white willow	Eastern cottonwood, Siouxland cottonwood
Deerwood-----	5	---	---	---	---	---
Karlstad-----	3	Nanking cherry, Peking cotoneaster	Common chokecherry, common lilac	Blue spruce, eastern redcedar, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Redby-----	2	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, Russian-olive	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
1206: Cormant-----	55	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Peashrub, Black Hills spruce, Manchurian crabapple, black ash, white spruce	Golden willow, white willow	Eastern cottonwood, Siouxland cottonwood
Redby-----	35	Nanking cherry, redosier dogwood	American cranberrybush, common lilac	Blue spruce, Black Hills spruce, Scotch pine, Russian-olive, white spruce	Norway spruce, common hackberry, jack pine, paper birch, eastern white pine, green ash, red pine	Imperial Carolina poplar, eastern cottonwood
Hiwood-----	5	Redosier dogwood, sargent crabapple	Common lilac, late lilac, silver buffaloberry	Siberian crabapple, Manchurian crabapple, Russian- olive	Jack pine, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Leafriver-----	5	---	---	---	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1214: Mustinka-----	90	Nanking cherry, redosier dogwood	American plum, common chokecherry	Siberian crabapple, eastern arborvitae, peashrub, Black Hills spruce, Manchurian crabapple, Russian- olive	Golden willow, green ash, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Espelie-----	4	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, Manchurian crabapple	Golden willow, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood
Wildwood-----	4	---	---	---	---	---
Dalbo-----	2	Peking cotoneaster, redosier dogwood	American cranberrybush, eastern arborvitae, hedge cotoneaster, common lilac	Amur maple, Manchurian crabapple, bur oak, white spruce	Eastern white pine, green ash	Silver maple, imperial Carolina poplar, eastern cottonwood
1274B: Redby-----	40	Honeysuckle, redosier dogwood	American cranberrybush, common lilac	Blue spruce, Russian-olive, white spruce	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine	Imperial Carolina poplar, eastern cottonwood
Hiwood-----	30	Siberian crabapple, sargent crabapple	American plum, common lilac	Manchurian crabapple, Scotch pine, Russian-olive	Jack pine, paper birch, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Leafriver, wooded-----	15	---	---	---	---	---
Clearriver-----	5	Peking cotoneaster, honeysuckle	Common lilac, late lilac, silver buffaloberry	Eastern redcedar, Manchurian crabapple, Scotch pine, ponderosa pine, Russian-olive	Jack pine, eastern white pine, green ash, Siberian elm	Silver maple, eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1274B: Cormant-----	5	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Blue spruce, Manchurian crabapple, black ash, white spruce	Golden willow, white willow	Eastern cottonwood, Siouxland cottonwood
Zimmerman-----	5	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Siberian crabapple, eastern redcedar, Manchurian crabapple, Russian- olive	Jack pine, paper birch, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
1298: Borup-----	90	Nanking cherry, redosier dogwood	Common chokecherry, common lilac	Peashrub, American mountainash, Black Hills spruce, Russian-olive	Golden willow, green ash, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Augsburg, depressional--	3	---	---	---	---	---
Glyndon-----	3	Peking cotoneaster, honeysuckle	American plum, common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Sago-----	2	---	---	---	---	---
Skime-----	2	Peking cotoneaster, sargent crabapple	Common chokecherry, common lilac	Black Hills spruce, Siberian crabapple, Manchurian crabapple, Scotch pine, Russian- olive, white spruce	Jack pine, eastern white pine, green ash, Siberian elm	Eastern cottonwood, Siouxland cottonwood
1302: Foldahl-----	85	Peking cotoneaster, redosier dogwood	American plum, common chokecherry	Blue spruce, eastern redcedar, Manchurian crabapple, Scotch pine, bur oak, white spruce	Golden willow, green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1302: Kratka-----	10	Nanking cherry, Peking cotoneaster	Common chokecherry, common lilac	Blue spruce, eastern redcedar, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Foxhome-----	5	Nanking cherry, Peking cotoneaster	Common chokecherry, common lilac, silver buffaloberry	Siberian crabapple, eastern redcedar, ponderosa pine, Manchurian crabapple, bur oak, Russian-olive	Green ash, Siberian elm	Silver maple, imperial Carolina poplar, eastern cottonwood
1304: Glyndon-----	85	Nanking cherry, Peking cotoneaster	American plum, common chokecherry, common lilac	Blue spruce, peashrub, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Borup-----	10	Nanking cherry, redosier dogwood	Common chokecherry, common lilac	Peashrub, American mountainash, Black Hills spruce, Russian-olive	Golden willow, green ash, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Skime-----	5	Peking cotoneaster, sargent crabapple	Common chokecherry, common lilac	Black Hills spruce, Siberian crabapple, Manchurian crabapple, Scotch pine, Russian- olive, white spruce	Jack pine, eastern white pine, green ash, Siberian elm	Eastern cottonwood, Siouxland cottonwood
1305: Hilaire-----	85	Peking cotoneaster, redosier dogwood	American plum, common chokecherry	Black Hills spruce, Manchurian crabapple, Scotch pine, white spruce	Norway spruce, golden willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Espelie-----	11	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, Manchurian crabapple	Golden willow, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1305:						
Grano-----	2	Honeysuckle, redosier dogwood	Common chokecherry, common lilac	Black Hills spruce, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Redby-----	2	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, Russian-olive	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
1314:						
Tacoosh-----	90	---	---	---	---	---
Rifle-----	8	---	---	---	---	---
Sax-----	2	---	---	---	---	---
1316:						
Wheatville-----	85	Nanking cherry, golden currant	American plum, common chokecherry, common lilac	Peashrub, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Augsburg-----	13	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Black Hills spruce, Russian-olive, white spruce	Laurel willow, golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Grano-----	2	Honeysuckle, redosier dogwood	Common chokecherry, common lilac	Black Hills spruce, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
1326:						
Augsburg, depressional--	45	---	---	---	---	---
Wabanica, depressional--	45	---	---	---	---	---
Sax-----	6	---	---	---	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1326: Espelie-----	2	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, Manchurian crabapple	Golden willow, white willow	Silver maple, imperial Carolina poplar, eastern cottonwood
Zippel-----	2	Redosier dogwood, sargent crabapple	American plum, common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, white spruce	Common hackberry, golden willow, green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
1327B: Karlstad-----	65	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Marquette-----	25	Honeysuckle, sargent crabapple	Common chokecherry, common lilac, silver buffaloberry	Blue spruce, eastern redcedar, bur oak, Russian-olive	Green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Sahkahtay-----	7	Honeysuckle, redosier dogwood	American plum, common chokecherry, common lilac	Amur maple, eastern arborvitae, Black Hills spruce, black ash, white spruce	Common hackberry, paper birch, golden willow, green ash	Silver maple, eastern cottonwood
Redby-----	3	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, Russian-olive	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
1328: Northwood, wooded-----	90	---	---	---	---	---
Berner, wooded-----	5	---	---	---	---	---
Grygla-----	5	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, Black Hills spruce, black ash, white spruce	Paper birch, green ash	Silver maple, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1333:						
Dora, wooded-----	90	---	---	---	---	---
Lupton-----	4	---	---	---	---	---
Wildwood-----	4	---	---	---	---	---
Auganaush-----	2	Nanking cherry, Peking cotoneaster, common ninebark	Common chokecherry, silver buffaloberry	Amur maple, eastern arborvitae, Black Hills spruce, black ash, Russian-olive, white spruce	Golden willow, green ash	Silver maple, eastern cottonwood
1356:						
Water, miscellaneous.						
1399B:						
Two Inlets-----	85	Peking cotoneaster, honeysuckle	Common lilac, silver buffaloberry	Blue spruce, eastern redcedar, bur oak	Jack pine, eastern white pine, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Wurtsmith-----	6	Redosier dogwood, sargent crabapple	American plum, common lilac	Siberian crabapple, eastern redcedar, Manchurian crabapple	Jack pine, paper birch, eastern white pine, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Zimmerman-----	6	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Siberian crabapple, eastern redcedar, Manchurian crabapple, Russian- olive	Jack pine, paper birch, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, eastern cottonwood
Meehan-----	3	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common lilac	Blue spruce, eastern redcedar, Scotch pine, white spruce	Norway spruce, jack pine, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, Siouxland cottonwood
1401:						
Grygla, depressional----	90	---	---	---	---	---
Northwood, wooded-----	5	---	---	---	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1401: Chilgren-----	3	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, black ash, white spruce	Paper birch, green ash, white willow	Silver maple, eastern cottonwood
Grygla-----	2	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, Black Hills spruce, black ash, white spruce	Paper birch, green ash	Silver maple, Siouxland cottonwood
1402: Leafriver, wooded-----	90	---	---	---	---	---
Cormant-----	4	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Blue spruce, Manchurian crabapple, black ash, white spruce	Golden willow, white willow	Eastern cottonwood, Siouxland cottonwood
Tawas-----	4	---	---	---	---	---
Redby-----	2	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, Russian-olive	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
1404: Berner, wooded-----	90	---	---	---	---	---
Lupton-----	4	---	---	---	---	---
Northwood, wooded-----	4	---	---	---	---	---
Grygla-----	2	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, Black Hills spruce, black ash, white spruce	Paper birch, green ash	Silver maple, Siouxland cottonwood
1405: Lallie-----	90	---	---	---	---	---
Sax-----	7	---	---	---	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1405: Wabanica-----	3	Honeysuckle, redosier dogwood	Common chokecherry, common lilac	Peashrub, Black Hills spruce, Manchurian crabapple, black ash, Russian-olive	Golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
1414: Nereson, very cobbly----	85	Peking cotoneaster, common lilac, honeysuckle	American cranberrybush, common chokecherry	Blue spruce, eastern redcedar, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Silver maple, imperial Carolina poplar, eastern cottonwood
Percy, very cobbly-----	10	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Pelan-----	3	Peking cotoneaster, redosier dogwood	American plum, common chokecherry, hedge cotoneaster, common lilac, silver buffaloberry	Ponderosa pine, Manchurian crabapple, bur oak, Russian-olive	Green ash, Siberian elm	Silver maple, imperial Carolina poplar, eastern cottonwood
Foxhome-----	2	Nanking cherry, Peking cotoneaster	Common chokecherry, common lilac, silver buffaloberry	Siberian crabapple, eastern redcedar, ponderosa pine, Manchurian crabapple, bur oak, Russian-olive	Green ash, Siberian elm	Silver maple, imperial Carolina poplar, eastern cottonwood
1428: Karlsruhe-----	85	Nanking cherry, Peking cotoneaster, common chokecherry, redosier dogwood	American cranberrybush, American plum	Eastern redcedar, ponderosa pine, Black Hills spruce, bur oak	Common hackberry, laurel willow, golden willow, green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Syrene-----	10	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Eastern redcedar, Black Hills spruce, bur oak, Russian- olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1428: Ulen-----	5	Nanking cherry, sargent crabapple	Common chokecherry, common lilac	Blue spruce, eastern redcedar, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
1444: Wurtsmith-----	85	Redosier dogwood, sargent crabapple	American plum, common lilac	Siberian crabapple, eastern redcedar, Manchurian crabapple	Jack pine, paper birch, eastern white pine, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Meehan-----	10	Nanking cherry, Peking cotoneaster, redosier dogwood	American plum, common lilac	Blue spruce, eastern redcedar, Scotch pine, white spruce	Norway spruce, jack pine, eastern white pine, green ash, red pine, Siberian elm	Imperial Carolina poplar, Siouxland cottonwood
Clearriver-----	2	Peking cotoneaster, honeysuckle	Common lilac, late lilac, silver buffaloberry	Eastern redcedar, Manchurian crabapple, Scotch pine, ponderosa pine, Russian-olive	Jack pine, eastern white pine, green ash, Siberian elm	Silver maple, eastern cottonwood
Two Inlets-----	2	Peking cotoneaster, honeysuckle	Common lilac, silver buffaloberry	Blue spruce, eastern redcedar, bur oak	Jack pine, eastern white pine, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
Cormant-----	1	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Blue spruce, Manchurian crabapple, black ash, white spruce	Golden willow, white willow	Eastern cottonwood, Siouxland cottonwood
1448: Grano-----	90	Honeysuckle, redosier dogwood	Common chokecherry, common lilac	Eastern arborvitae, Black Hills spruce, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1448:						
Percy-----	5	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Augsburg-----	3	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Black Hills spruce, Russian-olive, white spruce	Laurel willow, golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Woodslake-----	2	---	---	---	---	---
1449:						
Grano-----	90	Honeysuckle, redosier dogwood	Common chokecherry, common lilac	Black Hills spruce, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Percy-----	5	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Augsburg-----	3	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Black Hills spruce, Russian-olive, white spruce	Laurel willow, golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Woodslake-----	2	---	---	---	---	---
1807:						
Cathro, ponded-----	90	---	---	---	---	---
Haug-----	4	---	---	---	---	---
Seelyeville, ponded-----	4	---	---	---	---	---
Percy-----	2	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Blue spruce, Black Hills spruce, bur oak, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1808:						
Markey, ponded-----	90	---	---	---	---	---
Leafriver-----	4	---	---	---	---	---
Seelyeville, ponded----	4	---	---	---	---	---
Cormant-----	2	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Blue spruce, Manchurian crabapple, black ash, white spruce	Golden willow, white willow	Eastern cottonwood, Siouxland cottonwood
1918:						
Croke-----	85	Honeysuckle, redosier dogwood	American cranberrybush, common lilac	Eastern redcedar, peashrub, Black Hills spruce, bur oak, white spruce	Eastern white pine, green ash	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Augsburg-----	13	Redosier dogwood, sargent crabapple	Common chokecherry, common lilac	Black Hills spruce, Russian-olive, white spruce	Laurel willow, golden willow, Siberian elm, white willow	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
Grano-----	2	Honeysuckle, redosier dogwood	Common chokecherry, common lilac	Black Hills spruce, Russian-olive, white spruce	Golden willow, Siberian elm	Imperial Carolina poplar, eastern cottonwood, Siouxland cottonwood
1923B:						
Garnes, very stony-----	85	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Eastern arborvitae, Black Hills spruce, Scotch pine, white spruce	Paper birch, eastern white pine, green ash, red pine	Eastern cottonwood, Siouxland cottonwood
Chilgren-----	10	Nanking cherry, Peking cotoneaster, common ninebark, redosier dogwood	American cranberrybush, common lilac	Eastern arborvitae, black ash, white spruce	Paper birch, green ash, white willow	Silver maple, eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and component name	Percent of map unit	Trees having predicted 20-year average height, in feet, of--				
		<8	8-15	16-25	26-35	>35
1923B: Eckvoll-----	3	Peking cotoneaster, redosier dogwood	American plum, common chokecherry	Blue spruce, eastern redcedar, Manchurian crabapple, Scotch pine, bur oak, white spruce	American basswood, eastern white pine, golden willow	Silver maple, eastern cottonwood
Pelan-----	2	Peking cotoneaster, redosier dogwood	American plum, common chokecherry, hedge cotoneaster, common lilac, silver buffaloberry	Ponderosa pine, Manchurian crabapple, bur oak, Russian-olive	Green ash, Siberian elm	Silver maple, imperial Carolina poplar, eastern cottonwood
1984: Leafriver-----	90	---	---	---	---	---
Cormant-----	5	Nanking cherry, Peking cotoneaster, redosier dogwood	American cranberrybush, American plum, common chokecherry, common lilac	Blue spruce, Manchurian crabapple, black ash, white spruce	Golden willow, white willow	Eastern cottonwood, Siouxland cottonwood
Markey-----	3	---	---	---	---	---
Redby-----	2	Peking cotoneaster, redosier dogwood, sargent crabapple	American cranberrybush, American plum, common lilac	Blue spruce, Russian-olive	Norway spruce, common hackberry, jack pine, paper birch, green ash, red pine, Siberian elm	Eastern cottonwood, Siouxland cottonwood
W: Water.						

Table 11.--Windbreak Suitability Groups

(Suitable shrubs and trees with their mature heights are listed in table 10. Absence of an entry indicates that a windbreak suitability group is not assigned.)

Map symbol and component name	Percent of map unit	Windbreak suitability group
47:		
Colvin-----	85	2K
Bearden-----	5	1
Grano-----	5	2K
Sax-----	5	10
48B:		
Hiwood-----	85	7
Redby-----	7	1
Clearriver-----	3	7
Cormant-----	3	2
Zimmerman-----	2	7
52:		
Augsburg-----	85	2K
Croke-----	5	1
Grano-----	5	2K
Sago-----	5	10
59:		
Grimstad-----	85	1K
Strathcona-----	12	2K
Foxhome-----	3	6G
64:		
Ulen-----	85	1K
Rosewood-----	10	2K
Redby-----	3	1
Rushlake-----	2	1
65:		
Foxhome-----	85	6G
Strandquist-----	12	2K
Skagen-----	3	1K
67:		
Bearden-----	85	1
Colvin-----	15	2K

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Percent of map unit	Windbreak suitability group
77:		
Garnes-----	85	1
Chilgren-----	10	2
Eckvoll-----	3	1
Pelan-----	2	5
111:		
Hangaard-----	90	2K
Deerwood-----	5	10
Rushlake-----	3	1
Rosewood-----	2	2K
116:		
Redby-----	85	1
Cormant-----	8	2
Hiwood-----	6	7
Leafriver-----	1	10
117:		
Cormant-----	85	2
Leafriver-----	7	10
Epoufette-----	3	2
Redby-----	3	1
Grygla, depressional--	2	10
133:		
Dalbo-----	85	4
Mustinka-----	10	2
Moranville-----	5	1
145:		
Enstrom-----	85	1
Grygla-----	10	2
Redby-----	4	1
Pelan-----	1	5
147:		
Spooner-----	85	2
Baudette-----	5	3
Grygla-----	5	2
Sago-----	5	10

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Percent of map unit	Windbreak suitability group
158B:		
Zimmerman-----	85	7
Hiwood-----	6	7
Two Inlets-----	6	7
Redby-----	3	1
167B:		
Baudette-----	85	3
Spooner-----	10	2
Moranville-----	5	1
187:		
Haug-----	90	10
Percy-----	5	2K
Cathro-----	3	10
Boash-----	2	2K
191:		
Epoufette-----	85	2
Cormant-----	5	2
Leafriver-----	5	10
Meehan-----	5	1
202:		
Meehan-----	85	1
Cormant-----	8	2
Wurtsmith-----	5	7
Leafriver-----	2	10
205:		
Karlstad-----	85	1
Sahkahtay-----	7	2
Marquette-----	5	7
Redby-----	2	1
Pits, gravel-----	1	---
242B:		
Marquette-----	85	7
Karlstad-----	14	1
Pits, gravel-----	1	---

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Percent of map unit	Windbreak suitability group
280:		
Pelan-----	85	5
Strandquist-----	10	2K
Garnes-----	3	1
Marquette-----	1	7
Pits, gravel-----	1	---
379:		
Percy, very cobbly----	90	2K
Boash-----	3	2K
Strandquist-----	3	2K
Haug-----	2	10
Skagen, very cobbly---	2	1K
383:		
Percy-----	90	2K
Boash-----	3	2K
Strandquist-----	3	2K
Haug-----	2	10
Skagen-----	2	1K
384:		
Percy, depressional---	85	10
Haug-----	7	10
Percy-----	5	2K
Boash-----	3	2K
387:		
Roliss, depressional--	85	10
Haug-----	10	10
Roliss-----	5	2K
404:		
Chilgren-----	85	2
Garnes-----	5	1
Grygla-----	5	2
Haug-----	5	10
412:		
Mavie-----	85	2K
Foxhome-----	5	6G

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Percent of map unit	Windbreak suitability group
412:		
Northwood-----	5	10
Percy, very cobbly----	5	2K
432:		
Strandquist-----	85	2K
Percy, very cobbly----	5	2K
Haug-----	4	10
Boash-----	3	2K
Foxhome-----	3	6G
433:		
Syrene, depressional--	85	10
Deerwood-----	5	10
Rosewood-----	5	2K
Syrene-----	5	2K
435:		
Syrene-----	85	2K
Rosewood-----	5	2K
Syrene, depressional--	5	10
Karlsruhe-----	3	1
Deerwood-----	2	10
439:		
Strathcona-----	85	2K
Northwood-----	5	10
Percy-----	5	2K
Grimstad-----	3	1K
Strandquist-----	2	2K
481:		
Kratka-----	85	2
Northwood-----	5	10
Percy-----	5	2K
Enstrom-----	3	1
Strandquist-----	2	2K

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Percent of map unit	Windbreak suitability group
482:		
Grygla-----	85	2
Chilgren-----	5	2
Grygla, depressional--	5	10
Enstrom-----	3	1
Northwood-----	2	10
532:		
Sago-----	90	10
Cathro-----	5	10
Zippel-----	5	2K
534:		
Mooselake-----	90	10
Bullwinkle-----	4	10
Dora-----	3	10
Tawas-----	3	10
540:		
Seelyeville-----	90	10
Cathro-----	4	10
Dora-----	3	10
Markey-----	3	10
541:		
Rifle-----	90	10
Tacoosh-----	10	10
543:		
Markey-----	90	10
Cormant-----	5	2
Seelyeville-----	5	10
544:		
Cathro-----	90	10
Percy, very cobbly----	4	2K
Grygla-----	3	2
Seelyeville-----	3	10
546:		
Lupton-----	90	10
Bullwinkle-----	4	10
Dora-----	3	10

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Percent of map unit	Windbreak suitability group
546:		
Tawas-----	3	10
547:		
Deerwood-----	90	10
Markey-----	4	10
Rosewood-----	3	2K
Syrene-----	3	2K
550:		
Dora-----	90	10
Boash-----	4	2K
Seelyeville-----	3	10
Woodslake-----	3	10
561:		
Bullwinkle-----	90	10
Lupton-----	4	10
Northwood, wooded-----	4	10
Chilgren-----	2	2
563:		
Northwood-----	90	10
Grygla-----	4	2
Berner-----	3	10
Strandquist-----	3	2K
565:		
Eckvoll-----	85	1
Chilgren-----	5	2
Grygla-----	5	2
Hiwood-----	5	7
568:		
Zippel-----	85	2K
Augsburg, depressional	5	10
Sago-----	5	10
Skime-----	5	1
569:		
Wabanica-----	85	2K
Warroad-----	6	2
Sax-----	4	10

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Percent of map unit	Windbreak suitability group
569:		
Grano-----	3	2K
Enstrom-----	2	1
570:		
Faunce-----	85	7
Clearriver-----	7	7
Zimmerman-----	4	7
Meehan-----	3	1
Pits, gravel-----	1	---
581:		
Percy-----	90	2K
Haug-----	5	10
Boash-----	3	2K
Skagen-----	2	1K
582:		
Roliss-----	85	2K
Roliss, depressional--	7	10
Boash-----	5	2K
Haug-----	3	10
583:		
Nereson-----	85	1
Percy-----	10	2K
Pelan-----	3	5
Foxhome-----	2	6G
627:		
Tawas-----	90	10
Leafriver-----	4	10
Lupton-----	4	10
Cormant-----	2	2
630:		
Wildwood-----	90	10
Boash-----	4	2K
Dora-----	4	10
Espelie-----	2	2

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Percent of map unit	Windbreak suitability group
643:		
Huot-----	85	1K
Thiefriever-----	12	2K
Redby-----	3	1
644:		
Boash-----	85	2K
Percy-----	7	2K
Woodslake-----	5	10
Strandquist-----	3	2K
645:		
Espelie-----	85	2
Grano-----	5	2K
Hilaire-----	5	1
Wildwood-----	5	10
651:		
Thiefriever-----	85	2K
Grano-----	5	2K
Huot-----	5	1K
Wildwood-----	5	10
708:		
Rushlake-----	85	1
Corliss-----	6	7
Redby-----	5	1
Hangaard-----	3	2K
Pits, gravel-----	1	---
712:		
Rosewood-----	85	2K
Deerwood-----	6	10
Hangaard-----	5	2K
Ulen-----	4	1K
721B:		
Corliss-----	85	7
Rushlake-----	10	1
Hangaard-----	4	2K
Pits, gravel-----	1	---

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Percent of map unit	Windbreak suitability group
733:		
Berner-----	90	10
Grygla-----	5	2
Seelyeville-----	5	10
737:		
Mahkonce-----	85	4
Auganaush-----	10	2
Eckvoll-----	5	1
755:		
Woodslake-----	85	10
Boash-----	8	2K
Wildwood-----	5	10
Dora-----	2	10
767:		
Auganaush-----	90	2
Mustinka-----	5	2
Wildwood-----	3	10
Mahkonce-----	2	4
794:		
Clearriver-----	85	7
Hiwood-----	7	7
Meehan-----	5	1
Faunce-----	3	7
1002:		
Fluvaquents, frequently flooded---	90	10
Seelyeville-----	6	10
Hapludalfs-----	2	3
Water-----	2	---
1030:		
Pits, gravel-----	75	---
Udipsamments-----	20	---
Corliss-----	2	7
Karlstad-----	2	1
Hangaard-----	1	2K

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Percent of map unit	Windbreak suitability group
1031:		
Seelyeville, ponded---	90	10
Cathro-----	4	10
Dora-----	3	10
Markey-----	3	10
1067:		
Fluvaquents, frequently flooded---	60	10
Hapludalfs-----	30	3
Seelyeville-----	5	10
Water-----	5	---
1133B:		
Skime-----	85	1
Hiwood-----	10	7
Zippel-----	5	2K
1134:		
Borup-----	55	2K
Glyndon-----	35	1K
Augsburg, depressional	5	10
Skime-----	5	1
1144:		
Strathcona, depressional-----	45	10
Kratka, depressional--	45	10
Kratka-----	5	2
Northwood-----	5	10
1154:		
Sax-----	90	10
Wabanica-----	5	2K
Cathro-----	3	10
Woodslake-----	2	10
1158:		
Skagen-----	85	1K
Percy-----	10	2K
Foxhome-----	5	6G

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Percent of map unit	Windbreak suitability group
1170:		
Skagen, very cobbly---	85	1K
Percy, very cobbly----	10	2K
Foxhome-----	5	6G
1179B:		
Moranville-----	85	1
Baudette-----	5	3
Hiwood-----	5	7
Spooner-----	5	2
1181:		
Rosewood-----	50	2K
Ulen-----	40	1K
Redby-----	5	1
Deerwood-----	3	10
Syrene-----	2	2K
1182:		
Warroad-----	85	2
Wabanica-----	7	2K
Enstrom-----	5	1
Sax-----	3	10
1187:		
Dora, ponded-----	90	10
Seelyeville, ponded---	4	10
Wildwood-----	4	10
Boash-----	2	2K
1191:		
Sahkahtay-----	85	2
Cormant-----	5	2
Deerwood-----	5	10
Karlstad-----	3	1
Redby-----	2	1
1206:		
Cormant-----	55	2
Redby-----	35	1
Hiwood-----	5	7
Leafriver-----	5	10

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Percent of map unit	Windbreak suitability group
1214:		
Mustinka-----	90	2
Espelie-----	4	2
Wildwood-----	4	10
Dalbo-----	2	4
1274B:		
Redby-----	40	1
Hiwood-----	30	7
Leafriver, wooded----	15	10
Clearriver-----	5	7
Cormant-----	5	2
Zimmerman-----	5	7
1298:		
Borup-----	90	2K
Augsburg, depressiona	3	10
Glyndon-----	3	1K
Sago-----	2	10
Skime-----	2	1
1302:		
Foldahl-----	85	1
Kratka-----	10	2
Foxhome-----	5	6G
1304:		
Glyndon-----	85	1K
Borup-----	10	2K
Skime-----	5	1
1305:		
Hilaire-----	85	1
Espelie-----	11	2
Grano-----	2	2K
Redby-----	2	1
1314:		
Tacoosh-----	90	10
Rifle-----	8	10
Sax-----	2	10

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Percent of map unit	Windbreak suitability group
1316:		
Wheatville-----	85	1K
Augsburg-----	13	2K
Grano-----	2	2K
1326:		
Augsburg, depressional	45	10
Wabanica, depressional	45	10
Sax-----	6	10
Espelie-----	2	2
Zippel-----	2	2K
1327B:		
Karlstad-----	65	1
Marquette-----	25	7
Sahkahtay-----	7	2
Redby-----	3	1
1328:		
Northwood, wooded-----	90	10
Berner, wooded-----	5	10
Grygla-----	5	2
1333:		
Dora, wooded-----	90	10
Lupton-----	4	10
Wildwood-----	4	10
Auganaush-----	2	2
1356:		
Water, miscellaneous.		
1399B:		
Two Inlets-----	85	7
Wurtsmith-----	6	7
Zimmerman-----	6	7
Meehan-----	3	1
1401:		
Grygla, depressional--	90	10
Northwood, wooded-----	5	10
Chilgren-----	3	2
Grygla-----	2	2

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Percent of map unit	Windbreak suitability group
1402:		
Leafriver, wooded-----	90	10
Cormant-----	4	2
Tawas-----	4	10
Redby-----	2	1
1404:		
Berner, wooded-----	90	10
Lupton-----	4	10
Northwood, wooded-----	4	10
Grygla-----	2	2
1405:		
Lallie-----	90	10
Sax-----	7	10
Wabanica-----	3	2K
1414:		
Nereson, very cobbly--	85	1
Percy, very cobbly----	10	2K
Pelan-----	3	5
Foxhome-----	2	6G
1428:		
Karlsruhe-----	85	1
Syrene-----	10	2K
Ulen-----	5	1K
1444:		
Wurtsmith-----	85	7
Meehan-----	10	1
Clearriver-----	2	7
Two Inlets-----	2	7
Cormant-----	1	2
1448:		
Grano-----	90	2K
Percy-----	5	2K
Augsburg-----	3	2K
Woodslake-----	2	10

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Percent of map unit	Windbreak suitability group
1449:		
Grano-----	90	2K
Percy-----	5	2K
Augsburg-----	3	2K
Woodslake-----	2	10
1807:		
Cathro, ponded-----	90	10
Haug-----	4	10
Seelyeville, ponded---	4	10
Percy-----	2	2K
1808:		
Markey, ponded-----	90	10
Leafriver-----	4	10
Seelyeville, ponded---	4	10
Cormant-----	2	2
1918:		
Croke-----	85	1
Augsburg-----	13	2K
Grano-----	2	2K
1923B:		
Garner, very stony----	85	1
Chilgren-----	10	2
Eckvoll-----	3	1
Pelan-----	2	5
1984:		
Leafriver-----	90	10
Cormant-----	5	2
Markey-----	3	10
Redby-----	2	1
W: Water.		

Table 12.--Forest Productivity

(Only the soils that support vegetation suitable for forest land management are listed.
Absence of an entry indicates that no rating is applicable.)

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
48B:					
Hiwood-----	85	Balsam fir-----	55	115	Eastern white pine,
		Jack pine-----	60	85	jack pine, red
		Paper birch-----	50	49	pine, white spruce
		Quaking aspen-----	60	64	
		Red pine-----	65	115	
		White spruce-----	50	96	
Redby-----	7	Balsam fir-----	55	114	Jack pine, red
		Jack pine-----	55	72	pine, white spruce
		Paper birch-----	55	57	
		Quaking aspen-----	60	72	
		Red pine-----	60	100	
		White spruce-----	55	100	
Clearriver-----	3	Balsam fir-----	55	114	Eastern white pine,
		Jack pine-----	55	72	jack pine, red
		Quaking aspen-----	60	72	pine, white spruce
		Red pine-----	65	114	
		White spruce-----	50	100	
Cormant-----	3	Balsam fir-----	50	100	Black ash, black
		Black ash-----	45	29	spruce, green ash
		Black spruce-----	45	43	
		Quaking aspen-----	60	72	
Zimmerman-----	2	Balsam fir-----	50	100	Eastern white pine,
		Jack pine-----	50	72	jack pine, red
		Quaking aspen-----	55	53	pine
		Red pine-----	55	86	
64:					
Ulen-----	85	---	---	---	---
Rosewood-----	10	---	---	---	---
Redby-----	3	Balsam fir-----	55	114	Jack pine, red
		Jack pine-----	55	72	pine, white spruce
		Paper birch-----	55	57	
		Quaking aspen-----	60	72	
		Red pine-----	60	100	
		White spruce-----	55	100	
Rushlake-----	2	Bur oak-----	40	29	Bur oak, jack pine,
		Jack pine-----	55	72	red pine, white
		Quaking aspen-----	60	72	spruce
		Red pine-----	65	114	
77:					
Garnes-----	85	Balsam fir-----	65	129	Bur oak, eastern
		Black ash-----	55	29	white pine, green
		Bur oak-----	60	43	ash, red pine,
		Paper birch-----	65	72	white spruce
		Quaking aspen-----	70	86	
		Red pine-----	60	100	
		White spruce-----	60	114	

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
77:					
Chilgren-----	10	Balsam fir-----	60	114	Black ash, black
		Black ash-----	50	29	spruce, white
		Paper birch-----	60	72	spruce
		Quaking aspen-----	65	72	
		White spruce-----	55	100	
Eckvoll-----	3	Balsam fir-----	60	114	Bur oak, eastern
		Bur oak-----	55	43	white pine, red
		Paper birch-----	60	72	pine, white spruce
		Quaking aspen-----	65	72	
		Red pine-----	65	114	
		White spruce-----	60	114	
Pelan-----	2	Bur oak-----	50	29	Bur oak, red pine
		Quaking aspen-----	55	57	
		Red pine-----	60	100	
111:					
Hangaard-----	90	---	---	---	---
Deerwood-----	5	---	---	---	---
Rushlake-----	3	Bur oak-----	40	29	Bur oak, jack pine,
		Jack pine-----	55	72	red pine, white
		Quaking aspen-----	60	72	spruce
		Red pine-----	65	114	
Rosewood-----	2	---	---	---	---
116:					
Redby-----	85	Balsam fir-----	55	114	Jack pine, red
		Jack pine-----	55	72	pine, white spruce
		Paper birch-----	55	57	
		Quaking aspen-----	60	72	
		Red pine-----	60	100	
		White spruce-----	55	100	
Cormant-----	8	Balsam fir-----	50	100	Black ash, black
		Black ash-----	45	29	spruce, green ash
		Black spruce-----	45	43	
		Quaking aspen-----	60	72	
Hiwood-----	6	Balsam fir-----	55	115	Eastern white pine,
		Jack pine-----	60	85	jack pine, red
		Paper birch-----	50	49	pine, white spruce
		Quaking aspen-----	60	64	
		Red pine-----	65	115	
		White spruce-----	50	96	
Leafriver-----	1	---	---	---	---
117:					
Cormant-----	85	Balsam fir-----	50	100	Black ash, black
		Black ash-----	45	29	spruce, green ash
		Black spruce-----	45	43	
		Quaking aspen-----	60	72	
Leafriver-----	7	---	---	---	---

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
117:					
Epoufette-----	3	Balsam fir-----	50	100	Black ash, black spruce
		Black ash-----	40	14	
		Quaking aspen-----	50	43	
Redby-----	3	Balsam fir-----	55	114	Jack pine, red pine, white spruce
		Jack pine-----	55	72	
		Paper birch-----	55	57	
		Quaking aspen-----	60	72	
		Red pine-----	60	100	
		White spruce-----	55	100	
Grygla, depressional----	2	Black ash-----	40	14	Black ash, black spruce
		Black spruce-----	35	43	
		Quaking aspen-----	40	29	
133:					
Dalbo-----	85	Balsam fir-----	65	129	Bur oak, green ash, white spruce
		Black ash-----	55	29	
		Bur oak-----	60	43	
		Paper birch-----	65	72	
		Quaking aspen-----	70	86	
		White spruce-----	60	114	
Mustinka-----	10	---	---	---	---
Moranville-----	5	Balsam fir-----	60	114	Bur oak, eastern white pine, red pine, white spruce
		Bur oak-----	55	43	
		Paper birch-----	60	72	
		Quaking aspen-----	70	86	
		Red pine-----	60	100	
		White spruce-----	60	114	
145:					
Enstrom-----	85	Balsam fir-----	60	114	Eastern white pine, jack pine, red pine
		Bur oak-----	55	43	
		Quaking aspen-----	65	72	
		Red pine-----	65	114	
		White spruce-----	55	100	
Grygla-----	10	Balsam fir-----	60	114	Black ash, black spruce, white spruce
		Black ash-----	50	29	
		Paper birch-----	60	72	
		Quaking aspen-----	65	72	
Redby-----	4	Balsam fir-----	55	114	Jack pine, red pine, white spruce
		Jack pine-----	55	72	
		Paper birch-----	55	57	
		Quaking aspen-----	60	72	
		Red pine-----	60	100	
		White spruce-----	55	100	
Pelan-----	1	Bur oak-----	50	29	Bur oak, red pine
		Quaking aspen-----	55	57	
		Red pine-----	60	100	
147:					
Spooner-----	85	Balsam fir-----	60	114	Black ash, black spruce, green ash
		Black ash-----	50	29	
		Paper birch-----	60	72	
		Quaking aspen-----	65	72	
		White spruce-----	55	100	

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
147:					
Baudette-----	5	Balsam fir-----	65	129	Bur oak, eastern
		Bur oak-----	60	43	white pine, green
		Paper birch-----	65	72	ash, red pine,
		Quaking aspen-----	70	86	white spruce
		Red pine-----	60	100	
		White spruce-----	60	114	
Grygla-----	5	Balsam fir-----	60	114	Black ash, black
		Black ash-----	50	29	spruce, white
		Paper birch-----	60	72	spruce
		Quaking aspen-----	65	72	
Sago-----	5	---	---	---	Black ash, eastern arborvitae, tamarack
158B:					
Zimmerman-----	85	Balsam fir-----	50	100	Eastern white pine,
		Jack pine-----	50	72	jack pine, red
		Quaking aspen-----	55	53	pine
		Red pine-----	55	86	
Hiwood-----	6	Balsam fir-----	55	115	Eastern white pine,
		Jack pine-----	60	85	jack pine, red
		Paper birch-----	50	49	pine, white spruce
		Quaking aspen-----	60	64	
		Red pine-----	65	115	
		White spruce-----	50	96	
Two Inlets-----	6	Balsam fir-----	50	100	Eastern white pine,
		Jack pine-----	50	72	jack pine, red
		Quaking aspen-----	55	57	pine
		Red pine-----	55	86	
Redby-----	3	Balsam fir-----	55	114	Jack pine, red
		Jack pine-----	55	72	pine, white spruce
		Paper birch-----	55	57	
		Quaking aspen-----	60	72	
		Red pine-----	60	100	
		White spruce-----	55	100	
167B:					
Baudette-----	85	Balsam fir-----	65	129	Bur oak, eastern
		Bur oak-----	60	43	white pine, green
		Paper birch-----	65	72	ash, red pine,
		Quaking aspen-----	70	86	white spruce
		Red pine-----	60	100	
		White spruce-----	60	114	
Spooner-----	10	Balsam fir-----	60	114	Black ash, black
		Black ash-----	50	29	spruce, green ash
		Paper birch-----	60	72	
		Quaking aspen-----	65	72	
		White spruce-----	55	100	
Moranville-----	5	Balsam fir-----	60	114	Bur oak, eastern
		Bur oak-----	55	43	white pine, red
		Paper birch-----	60	72	pine, white spruce
		Quaking aspen-----	70	86	
		Red pine-----	60	100	
		White spruce-----	60	114	

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
191:					
Epoufette-----	85	Balsam fir-----	50	100	Black ash, black spruce
		Black ash-----	40	14	
		Quaking aspen-----	50	43	
Cormant-----	5	Balsam fir-----	50	100	Black ash, black spruce, green ash
		Black ash-----	45	29	
		Black spruce-----	45	43	
		Quaking aspen-----	60	72	
Leafriver-----	5	---	---	---	---
Meehan-----	5	Balsam fir-----	55	114	Eastern white pine, jack pine, red pine, white spruce
		Jack pine-----	55	72	
		Paper birch-----	55	57	
		Quaking aspen-----	60	72	
		Red pine-----	60	100	
202:					
Meehan-----	85	Balsam fir-----	55	114	Eastern white pine, jack pine, red pine, white spruce
		Jack pine-----	55	72	
		Paper birch-----	55	57	
		Quaking aspen-----	60	72	
		Red pine-----	60	100	
Cormant-----	8	Balsam fir-----	50	100	Black ash, black spruce, green ash
		Black ash-----	45	29	
		Black spruce-----	45	43	
		Quaking aspen-----	60	72	
Wurtsmith-----	5	Balsam fir-----	55	114	Eastern white pine, jack pine, red pine, white spruce
		Jack pine-----	60	86	
		Quaking aspen-----	60	72	
		Red pine-----	65	114	
		White spruce-----	50	100	
Leafriver-----	2	---	---	---	---
205:					
Karlstad-----	85	Bur oak-----	45	29	Bur oak, eastern white pine, red pine, white spruce
		Quaking aspen-----	55	57	
		Red pine-----	60	100	
Sahkahtay-----	7	Balsam fir-----	50	100	Black ash, black spruce
		Black ash-----	40	14	
		Quaking aspen-----	50	43	
Marquette-----	5	Bur oak-----	40	29	Bur oak, red pine
		Quaking aspen-----	50	43	
		Red pine-----	55	86	
Redby-----	2	Balsam fir-----	55	114	Jack pine, red pine, white spruce
		Jack pine-----	55	72	
		Paper birch-----	55	57	
		Quaking aspen-----	60	72	
		Red pine-----	60	100	
		White spruce-----	55	100	
Pits, gravel-----	1	---	---	---	---

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
242B:					
Marquette-----	85	Bur oak-----	40	29	Bur oak, red pine
		Quaking aspen-----	50	43	
		Red pine-----	55	86	
Karlstad-----	14	Bur oak-----	45	29	Bur oak, eastern
		Quaking aspen-----	55	57	white pine, red
		Red pine-----	60	100	pine, white spruce
Pits, gravel-----	1	---	---	---	---
280:					
Pelan-----	85	Bur oak-----	50	29	Bur oak, red pine
		Quaking aspen-----	55	57	
		Red pine-----	60	100	
Strandquist-----	10	---	---	---	---
Garnes-----	3	Balsam fir-----	65	129	Bur oak, eastern
		Black ash-----	55	29	white pine, green
		Bur oak-----	60	43	ash, red pine,
		Paper birch-----	65	72	white spruce
		Quaking aspen-----	70	86	
		Red pine-----	60	100	
		White spruce-----	60	114	
Marquette-----	1	Bur oak-----	40	29	Bur oak, red pine
		Quaking aspen-----	50	43	
		Red pine-----	55	86	
Pits, gravel-----	1	---	---	---	---
404:					
Chilgren-----	85	Balsam fir-----	60	114	Black ash, black
		Black ash-----	50	29	spruce, white
		Paper birch-----	60	72	spruce
		Quaking aspen-----	65	72	
		White spruce-----	55	100	
Garnes-----	5	Balsam fir-----	65	129	Bur oak, eastern
		Black ash-----	55	29	white pine, green
		Bur oak-----	60	43	ash, red pine,
		Paper birch-----	65	72	white spruce
		Quaking aspen-----	70	86	
		Red pine-----	60	100	
		White spruce-----	60	114	
Grygla-----	5	Balsam fir-----	60	114	Black ash, black
		Black ash-----	50	29	spruce, white
		Paper birch-----	60	72	spruce
		Quaking aspen-----	65	72	
Haug-----	5	---	---	---	---
481:					
Kratka-----	85	---	---	---	---
Northwood-----	5	---	---	---	---
Percy-----	5	---	---	---	---

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
481:					
Enstrom-----	3	Balsam fir-----	60	114	Eastern white pine, jack pine, red pine
		Bur oak-----	55	43	
		Quaking aspen-----	65	72	
		Red pine-----	65	114	
		White spruce-----	55	100	
Strandquist-----	2	---	---	---	---
482:					
Grygla-----	85	Balsam fir-----	60	114	Black ash, black spruce, white spruce
		Black ash-----	50	29	
		Paper birch-----	60	72	
		Quaking aspen-----	65	72	
Chilgren-----	5	Balsam fir-----	60	114	Black ash, black spruce, white spruce
		Black ash-----	50	29	
		Paper birch-----	60	72	
		Quaking aspen-----	65	72	
		White spruce-----	55	100	
Grygla, depressional----	5	Black ash-----	40	14	Black ash, black spruce
		Black spruce-----	35	43	
		Quaking aspen-----	40	29	
Enstrom-----	3	Balsam fir-----	60	114	Eastern white pine, jack pine, red pine
		Bur oak-----	55	43	
		Quaking aspen-----	65	72	
		Red pine-----	65	114	
		White spruce-----	55	100	
Northwood-----	2	---	---	---	---
534:					
Mooselake-----	90	Black ash-----	40	14	Black ash, black spruce, tamarack
		Black spruce-----	35	43	
		Eastern arborvitae--	25	36	
		Tamarack-----	35	43	
Bullwinkle-----	4	Black ash-----	45	29	Black spruce, eastern arborvitae, tamarack
		Black spruce-----	40	43	
		Eastern arborvitae--	30	43	
		Tamarack-----	40	29	
Dora-----	3	Black ash-----	45	29	Black ash, black spruce, eastern arborvitae, tamarack
		Black spruce-----	40	43	
		Eastern arborvitae--	30	43	
		Tamarack-----	40	29	
Tawas-----	3	Black ash-----	45	29	Black spruce, eastern arborvitae, tamarack
		Black spruce-----	40	43	
		Eastern arborvitae--	30	43	
		Tamarack-----	40	29	
541:					
Rifle-----	90	---	---	---	Black spruce, eastern arborvitae, tamarack

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
541: Tacoosh-----	10	Black ash----- Black spruce----- Tamarack-----	45 40 40	29 43 29	Black ash, black spruce, tamarack
543: Markey-----	90	---	---	---	---
Cormant-----	5	Balsam fir----- Black ash----- Black spruce----- Quaking aspen-----	50 45 45 60	100 29 43 72	Black ash, black spruce, green ash
Seelyeville-----	5	---	---	---	---
544: Cathro-----	90	---	---	---	---
Percy, very cobbly-----	4	---	---	---	---
Grygla-----	3	Balsam fir----- Black ash----- Paper birch----- Quaking aspen-----	60 50 60 65	114 29 72 72	Black ash, black spruce, white spruce
Seelyeville-----	3	---	---	---	---
546: Lupton-----	90	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	40 35 25 35	14 43 36 43	Black ash, black spruce, tamarack
Bullwinkle-----	4	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	45 40 30 40	29 43 43 29	Black spruce, eastern arborvitae, tamarack
Dora-----	3	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	45 40 30 40	29 43 43 29	Black ash, black spruce, eastern arborvitae, tamarack
Tawas-----	3	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	45 40 30 40	29 43 43 29	Black spruce, eastern arborvitae, tamarack
561: Bullwinkle-----	90	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	45 40 30 40	29 43 43 29	Black spruce, eastern arborvitae, tamarack
Lupton-----	4	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	40 35 25 35	14 43 36 43	Black ash, black spruce, tamarack

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
561:					
Northwood, wooded-----	4	Black ash-----	45	29	Black ash, black
		Black spruce-----	40	43	spruce, eastern
		Eastern arborvitae--	30	43	arborvitae,
		Tamarack-----	40	29	tamarack
Chilgren-----	2	Balsam fir-----	60	114	Black ash, black
		Black ash-----	50	29	spruce, white
		Paper birch-----	60	72	spruce
		Quaking aspen-----	65	72	
		White spruce-----	55	100	
563:					
Northwood-----	90	---	---	---	---
Grygla-----	4	Balsam fir-----	60	114	Black ash, black
		Black ash-----	50	29	spruce, white
		Paper birch-----	60	72	spruce
		Quaking aspen-----	65	72	
Berner-----	3	---	---	---	---
Strandquist-----	3	---	---	---	---
565:					
Eckvoll-----	85	Balsam fir-----	60	114	Bur oak, eastern
		Bur oak-----	55	43	white pine, red
		Paper birch-----	60	72	pine, white spruce
		Quaking aspen-----	65	72	
		Red pine-----	65	114	
		White spruce-----	60	114	
Chilgren-----	5	Balsam fir-----	60	114	Black ash, black
		Black ash-----	50	29	spruce, white
		Paper birch-----	60	72	spruce
		Quaking aspen-----	65	72	
		White spruce-----	55	100	
Grygla-----	5	Balsam fir-----	60	114	Black ash, black
		Black ash-----	50	29	spruce, white
		Paper birch-----	60	72	spruce
		Quaking aspen-----	65	72	
Hiwood-----	5	Balsam fir-----	55	115	Eastern white pine,
		Jack pine-----	60	85	jack pine, red
		Paper birch-----	50	49	pine, white spruce
		Quaking aspen-----	60	64	
		Red pine-----	65	115	
		White spruce-----	50	96	
569:					
Wabanica-----	85	---	---	---	---
Warroad-----	6	---	---	---	---
Sax-----	4	---	---	---	Black ash, eastern
					arborvitae,
					tamarack
Grano-----	3	---	---	---	---

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
569: Enstrom-----	2	Balsam fir----- Bur oak----- Quaking aspen----- Red pine----- White spruce-----	60 55 65 65 55	114 43 72 114 100	Eastern white pine, jack pine, red pine
570: Faunce-----	85	Balsam fir----- Jack pine----- Quaking aspen----- Red pine-----	50 50 55 55	100 72 57 86	Eastern white pine, jack pine, red pine
Clearriver-----	7	Balsam fir----- Jack pine----- Quaking aspen----- Red pine----- White spruce-----	55 55 60 65 50	114 72 72 114 100	Eastern white pine, jack pine, red pine, white spruce
Zimmerman-----	4	Balsam fir----- Jack pine----- Quaking aspen----- Red pine-----	50 50 55 55	100 72 53 86	Eastern white pine, jack pine, red pine
Meehan-----	3	Balsam fir----- Jack pine----- Paper birch----- Quaking aspen----- Red pine-----	55 55 55 60 60	114 72 57 72 100	Eastern white pine, jack pine, red pine, white spruce
Pits, gravel-----	1	---	---	---	---
583: Nereson-----	85	Bur oak----- Quaking aspen----- Red pine-----	60 70 55	43 86 86	Bur oak, eastern white pine, red pine, white spruce
Percy-----	10	---	---	---	---
Pelan-----	3	Bur oak----- Quaking aspen----- Red pine-----	50 55 60	29 57 100	Bur oak, red pine
Foxhome-----	2	---	---	---	---
627: Tawas-----	90	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	45 40 30 40	29 43 43 29	Black spruce, eastern arborvitae, tamarack
Leafriver-----	4	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	45 40 30 40	29 43 43 29	Black ash, black spruce, eastern arborvitae, tamarack
Lupton-----	4	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	40 35 25 35	14 43 36 43	Black ash, black spruce, tamarack

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
627:					
Cormant-----	2	Balsam fir-----	50	100	Black ash, black spruce, green ash
		Black ash-----	45	29	
		Black spruce-----	45	43	
		Quaking aspen-----	60	72	
630:					
Wildwood-----	90	Black ash-----	45	29	Black ash, black spruce, tamarack
		Black spruce-----	40	43	
		Eastern arborvitae--	30	43	
		Tamarack-----	40	29	
Boash-----	4	---	---	---	---
Dora-----	4	---	---	---	---
Espelie-----	2	---	---	---	---
643:					
Huot-----	85	---	---	---	---
Thiefriever-----	12	---	---	---	---
Redby-----	3	Balsam fir-----	55	114	Jack pine, red pine, white spruce
		Jack pine-----	55	72	
		Paper birch-----	55	57	
		Quaking aspen-----	60	72	
		Red pine-----	60	100	
		White spruce-----	55	100	
645:					
Espelie-----	85	---	---	---	---
Grano-----	5	---	---	---	---
Hilaire-----	5	---	---	---	---
Wildwood-----	5	Black ash-----	45	29	Black ash, black spruce, tamarack
		Black spruce-----	40	43	
		Eastern arborvitae--	30	43	
		Tamarack-----	40	29	
651:					
Thiefriever-----	85	---	---	---	---
Grano-----	5	---	---	---	---
Huot-----	5	---	---	---	---
Wildwood-----	5	Black ash-----	45	29	Black ash, black spruce, tamarack
		Black spruce-----	40	43	
		Eastern arborvitae--	30	43	
		Tamarack-----	40	29	
708:					
Rushlake-----	85	Bur oak-----	40	29	Bur oak, jack pine, red pine, white spruce
		Jack pine-----	55	72	
		Quaking aspen-----	60	72	
		Red pine-----	65	114	
Corliss-----	6	Bur oak-----	40	29	Bur oak, red pine
		Quaking aspen-----	45	29	

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
708:					
Redby-----	5	Balsam fir-----	55	114	Jack pine, red pine, white spruce
		Jack pine-----	55	72	
		Paper birch-----	55	57	
		Quaking aspen-----	60	72	
		Red pine-----	60	100	
		White spruce-----	55	100	
Hangaard-----	3	---	---	---	---
Pits, gravel-----	1	---	---	---	---
721B:					
Corliss-----	85	Bur oak-----	40	29	Bur oak, red pine
		Quaking aspen-----	45	29	
Rushlake-----	10	Bur oak-----	40	29	Bur oak, jack pine, red pine, white spruce
		Jack pine-----	55	72	
		Quaking aspen-----	60	72	
		Red pine-----	65	114	
Hangaard-----	4	---	---	---	---
Pits, gravel-----	1	---	---	---	---
733:					
Berner-----	90	---	---	---	---
Grygla-----	5	Balsam fir-----	60	114	Black ash, black spruce, white spruce
		Black ash-----	50	29	
		Paper birch-----	60	72	
		Quaking aspen-----	65	72	
Seelyeville-----	5	---	---	---	---
737:					
Mahkonce-----	85	Balsam fir-----	65	129	Bur oak, eastern white pine, green ash, red pine, white spruce
		Black ash-----	55	29	
		Bur oak-----	60	43	
		Quaking aspen-----	70	86	
		Red pine-----	60	100	
		White spruce-----	60	114	
Auganaush-----	10	Balsam fir-----	60	114	Black ash, black spruce, white spruce
		Black ash-----	50	29	
		Paper birch-----	60	72	
		Quaking aspen-----	65	72	
Eckvoll-----	5	Balsam fir-----	60	114	Bur oak, eastern white pine, red pine, white spruce
		Bur oak-----	55	43	
		Paper birch-----	60	72	
		Quaking aspen-----	65	72	
		Red pine-----	65	114	
		White spruce-----	60	114	
755:					
Woodslake-----	85	---	---	---	---
Boash-----	8	---	---	---	---

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
755:					
Wildwood-----	5	Black ash-----	45	29	Black ash, black spruce, tamarack
		Black spruce-----	40	43	
		Eastern arborvitae--	30	43	
		Tamarack-----	40	29	
Dora-----	2	---	---	---	---
767:					
Auganaush-----	90	Balsam fir-----	60	114	Black ash, black spruce, white spruce
		Black ash-----	50	29	
		Paper birch-----	60	72	
		Quaking aspen-----	65	72	
Mustinka-----	5	---	---	---	---
Wildwood-----	3	Black ash-----	45	29	Black ash, black spruce, tamarack
		Black spruce-----	40	43	
		Eastern arborvitae--	30	43	
		Tamarack-----	40	29	
Mahkonce-----	2	Balsam fir-----	65	129	Bur oak, eastern white pine, green ash, red pine, white spruce
		Black ash-----	55	29	
		Bur oak-----	60	43	
		Quaking aspen-----	70	86	
		Red pine-----	60	100	
		White spruce-----	60	114	
794:					
Clearriver-----	85	Balsam fir-----	55	114	Eastern white pine, jack pine, red pine, white spruce
		Jack pine-----	55	72	
		Quaking aspen-----	60	72	
		Red pine-----	65	114	
		White spruce-----	50	100	
Hiwood-----	7	Balsam fir-----	55	115	Eastern white pine, jack pine, red pine, white spruce
		Jack pine-----	60	85	
		Paper birch-----	50	49	
		Quaking aspen-----	60	64	
		Red pine-----	65	115	
		White spruce-----	50	96	
Meehan-----	5	Balsam fir-----	55	114	Eastern white pine, jack pine, red pine, white spruce
		Jack pine-----	55	72	
		Paper birch-----	55	57	
		Quaking aspen-----	60	72	
		Red pine-----	60	100	
Faunce-----	3	Balsam fir-----	50	100	Eastern white pine, jack pine, red pine
		Jack pine-----	50	72	
		Quaking aspen-----	55	57	
		Red pine-----	55	86	
1002:					
Fluvaquents, frequently flooded-----	90	---	---	---	---
Seelyeville-----	6	---	---	---	---

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
1002:					
Hapludalfs-----	2	Balsam fir-----	65	129	Bur oak, eastern
		Black ash-----	55	35	white pine, green
		Bur oak-----	60	43	ash, red pine,
		Paper birch-----	65	72	white spruce
		Quaking aspen-----	70	86	
		Red pine-----	60	100	
		White spruce-----	60	114	
Water-----	2	---	---	---	---
1030:					
Pits, gravel-----	75	---	---	---	---
Udipsamments-----	20	---	---	---	---
Corliss-----	2	Bur oak-----	40	29	Bur oak, red pine
		Quaking aspen-----	45	29	
Karlstad-----	2	Bur oak-----	45	29	Bur oak, eastern
		Quaking aspen-----	55	57	white pine, red
		Red pine-----	60	100	pine, white spruce
Hangaard-----	1	---	---	---	---
1067:					
Fluvaquents, frequently flooded-----	60	---	---	---	---
Hapludalfs-----	30	Balsam fir-----	65	129	Bur oak, eastern
		Black ash-----	55	35	white pine, green
		Bur oak-----	60	43	ash, red pine,
		Paper birch-----	65	72	white spruce
		Quaking aspen-----	70	86	
		Red pine-----	60	100	
		White spruce-----	60	114	
Seelyeville-----	5	---	---	---	---
Water-----	5	---	---	---	---
1133B:					
Skime-----	85	---	---	---	---
Hiwood-----	10	Balsam fir-----	55	115	Eastern white pine,
		Jack pine-----	60	85	jack pine, red
		Paper birch-----	50	49	pine, white spruce
		Quaking aspen-----	60	64	
		Red pine-----	65	115	
		White spruce-----	50	96	
Zippel-----	5	---	---	---	---
1179B:					
Moranville-----	85	Balsam fir-----	60	114	Bur oak, eastern
		Bur oak-----	55	43	white pine, red
		Paper birch-----	60	72	pine, white spruce
		Quaking aspen-----	70	86	
		Red pine-----	60	100	
		White spruce-----	60	114	

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
1179B:					
Baudette-----	5	Balsam fir-----	65	129	Bur oak, eastern
		Bur oak-----	60	43	white pine, green
		Paper birch-----	65	72	ash, red pine,
		Quaking aspen-----	70	86	white spruce
		Red pine-----	60	100	
		White spruce-----	60	114	
Hiwood-----	5	Balsam fir-----	55	115	Eastern white pine,
		Jack pine-----	60	85	jack pine, red
		Paper birch-----	50	49	pine, white spruce
		Quaking aspen-----	60	64	
		Red pine-----	65	115	
		White spruce-----	50	96	
Spooner-----	5	Balsam fir-----	60	114	Black ash, black
		Black ash-----	50	29	spruce, green ash
		Paper birch-----	60	72	
		Quaking aspen-----	65	72	
		White spruce-----	55	100	
1181:					
Rosewood-----	50	---	---	---	---
Ulen-----	40	---	---	---	---
Redby-----	5	Balsam fir-----	55	114	Jack pine, red
		Jack pine-----	55	72	pine, white spruce
		Paper birch-----	55	57	
		Quaking aspen-----	60	72	
		Red pine-----	60	100	
		White spruce-----	55	100	
Deerwood-----	3	---	---	---	---
Syrene-----	2	---	---	---	---
1182:					
Warroad-----	85	---	---	---	---
Wabanica-----	7	---	---	---	---
Enstrom-----	5	Balsam fir-----	60	114	Eastern white pine,
		Bur oak-----	55	43	jack pine, red
		Quaking aspen-----	65	72	pine
		Red pine-----	65	114	
		White spruce-----	55	100	
Sax-----	3	---	---	---	Black ash, eastern
					arborvitae,
					tamarack
1187:					
Dora, ponded-----	90	---	---	---	---
Seelyville, ponded-----	4	---	---	---	---
Wildwood-----	4	Black ash-----	45	29	Black ash, black
		Black spruce-----	40	43	spruce, tamarack
		Eastern arborvitae--	30	43	
		Tamarack-----	40	29	

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
1187: Boash-----	2	---	---	---	---
1191: Sahkahtay-----	85	Balsam fir----- Black ash----- Quaking aspen-----	50 40 50	100 14 43	Black ash, black spruce
Cormant-----	5	Balsam fir----- Black ash----- Black spruce----- Quaking aspen-----	50 45 45 60	100 29 43 72	Black ash, black spruce, green ash
Deerwood-----	5	---	---	---	---
Karlstad-----	3	Bur oak----- Quaking aspen----- Red pine-----	45 55 60	29 57 100	Bur oak, eastern white pine, red pine, white spruce
Redby-----	2	Balsam fir----- Jack pine----- Paper birch----- Quaking aspen----- Red pine----- White spruce-----	55 55 55 60 60 55	114 72 57 72 100 100	Jack pine, red pine, white spruce
1206: Cormant-----	55	Balsam fir----- Black ash----- Black spruce----- Quaking aspen-----	50 45 45 60	100 29 43 72	Black ash, black spruce, green ash
Redby-----	35	Balsam fir----- Jack pine----- Quaking aspen----- Red pine----- White spruce-----	55 55 60 60 55	114 72 72 100 100	Jack pine, red pine, white spruce
Hiwood-----	5	Balsam fir----- Jack pine----- Paper birch----- Quaking aspen----- Red pine----- White spruce-----	55 60 50 60 65 50	115 85 49 64 115 96	Eastern white pine, jack pine, red pine, white spruce
Leafriver-----	5	---	---	---	---
1214: Mustinka-----	90	---	---	---	---
Espelie-----	4	---	---	---	---
Wildwood-----	4	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	45 40 30 40	29 43 43 29	Black ash, black spruce, tamarack

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
1214: Dalbo-----	2	Balsam fir----- Black ash----- Bur oak----- Paper birch----- Quaking aspen----- White spruce-----	65 55 60 65 70 60	129 29 43 72 86 114	Bur oak, green ash, white spruce
1274B: Redby-----	40	Balsam fir----- Jack pine----- Quaking aspen----- Red pine----- White spruce-----	55 55 60 60 55	114 72 72 100 100	Jack pine, red pine, white spruce
Hiwood-----	30	Balsam fir----- Jack pine----- Quaking aspen----- Red pine----- White spruce-----	55 60 60 65 50	114 86 72 114 100	Eastern white pine, jack pine, red pine, white spruce
Leafriver, wooded-----	15	Black ash----- Black spruce----- Tamarack-----	45 30 30	29 43 14	Black ash, black spruce, tamarack
Clearriver-----	5	Balsam fir----- Jack pine----- Quaking aspen----- Red pine----- White spruce-----	55 55 60 65 50	114 72 72 114 100	Eastern white pine, jack pine, red pine, white spruce
Cormant-----	5	Balsam fir----- Black ash----- Black spruce----- Quaking aspen-----	50 45 45 60	100 29 43 72	Black ash, black spruce, green ash
Zimmerman-----	5	Balsam fir----- Jack pine----- Quaking aspen----- Red pine-----	50 50 55 55	100 72 53 86	Eastern white pine, jack pine, red pine
1305: Hilaire-----	85	---	---	---	---
Espelie-----	11	---	---	---	---
Grano-----	2	---	---	---	---
Redby-----	2	Balsam fir----- Jack pine----- Paper birch----- Quaking aspen----- Red pine----- White spruce-----	55 55 55 60 60 55	114 72 57 72 100 100	Jack pine, red pine, white spruce
1314: Tacoosh-----	90	Black ash----- Black spruce----- Tamarack-----	45 40 40	29 43 29	Black ash, black spruce, tamarack

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
1314: Rifle-----	8	---	---	---	Black spruce, eastern arborvitae, tamarack
Sax-----	2	---	---	---	Black ash, eastern arborvitae, tamarack
1327B: Karlstad-----	65	Bur oak----- Quaking aspen----- Red pine-----	45 55 60	29 57 100	Bur oak, eastern white pine, red pine, white spruce
Marquette-----	25	Bur oak----- Quaking aspen----- Red pine-----	40 50 55	29 43 86	Bur oak, red pine
Sahkahtay-----	7	Balsam fir----- Black ash----- Quaking aspen-----	50 40 50	100 14 43	Black ash, black spruce
Redby-----	3	Balsam fir----- Jack pine----- Paper birch----- Quaking aspen----- Red pine----- White spruce-----	55 55 55 60 60 55	114 72 57 72 100 100	Jack pine, red pine, white spruce
1328: Northwood, wooded-----	90	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	45 40 30 40	29 43 43 29	Black ash, black spruce, eastern arborvitae, tamarack
Berner, wooded-----	5	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	45 40 30 40	29 43 43 29	Black spruce, eastern arborvitae, tamarack
Grygla-----	5	Balsam fir----- Black ash----- Paper birch----- Quaking aspen-----	60 50 60 65	114 29 72 72	Black ash, black spruce, white spruce
1333: Dora, wooded-----	90	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	45 40 30 40	29 43 43 29	Black ash, black spruce, eastern arborvitae, tamarack
Lupton-----	4	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	40 35 25 35	14 43 36 43	Black ash, black spruce, tamarack
Wildwood-----	4	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	45 40 30 40	29 43 43 29	Black ash, black spruce, tamarack

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
1333: Auganaush-----	2	Balsam fir----- Black ash----- Paper birch----- Quaking aspen-----	60 50 60 65	114 29 72 72	Black ash, black spruce, white spruce
1399B: Two Inlets-----	85	Balsam fir----- Jack pine----- Quaking aspen----- Red pine-----	50 50 55 55	100 72 57 86	Eastern white pine, jack pine, red pine
Wurtsmith-----	6	Balsam fir----- Jack pine----- Quaking aspen----- Red pine----- White spruce-----	55 60 60 65 50	114 86 72 114 100	Eastern white pine, jack pine, red pine, white spruce
Zimmerman-----	6	Balsam fir----- Jack pine----- Quaking aspen----- Red pine-----	50 50 55 55	100 72 53 86	Eastern white pine, jack pine, red pine
Meehan-----	3	Balsam fir----- Jack pine----- Paper birch----- Quaking aspen----- Red pine-----	55 55 55 60 60	114 72 57 72 100	Eastern white pine, jack pine, red pine, white spruce
1401: Grygla, depressional----	90	Black ash----- Black spruce----- Quaking aspen-----	40 35 40	14 43 29	Black ash, black spruce
Northwood, wooded-----	5	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	45 40 30 40	29 43 43 29	Black ash, black spruce, eastern arborvitae, tamarack
Chilgren-----	3	Balsam fir----- Black ash----- Paper birch----- Quaking aspen----- White spruce-----	60 50 60 65 55	114 29 72 72 100	Black ash, black spruce, white spruce
Grygla-----	2	Balsam fir----- Black ash----- Paper birch----- Quaking aspen-----	60 50 60 65	114 29 72 72	Black ash, black spruce, white spruce
1402: Leafriver, wooded-----	90	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	45 40 30 40	29 43 43 29	Black ash, black spruce, eastern arborvitae, tamarack

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
1402: Cormant-----	4	Balsam fir----- Black ash----- Black spruce----- Quaking aspen-----	50 45 45 60	100 29 43 72	Black ash, black spruce, green ash
Tawas-----	4	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	45 40 30 40	29 43 43 29	Black spruce, eastern arborvitae, tamarack
Redby-----	2	Balsam fir----- Jack pine----- Paper birch----- Quaking aspen----- Red pine----- White spruce-----	55 55 55 60 60 55	114 72 57 72 100 100	Jack pine, red pine, white spruce
1404: Berner, wooded-----	90	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	45 40 30 40	29 43 43 29	Black spruce, eastern arborvitae, tamarack
Lupton-----	4	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	40 35 25 35	14 43 36 43	Black ash, black spruce, tamarack
Northwood, wooded-----	4	Black ash----- Black spruce----- Eastern arborvitae-- Tamarack-----	45 40 30 40	29 43 43 29	Black ash, black spruce, eastern arborvitae, tamarack
Grygla-----	2	Balsam fir----- Black ash----- Paper birch----- Quaking aspen-----	60 50 60 65	114 29 72 72	Black ash, black spruce, white spruce
1414: Nereson, very cobbly----	85	Bur oak----- Quaking aspen----- Red pine-----	60 70 55	43 86 86	Bur oak, eastern white pine, red pine, white spruce
Percy, very cobbly-----	10	---	---	---	---
Pelan-----	3	Bur oak----- Quaking aspen----- Red pine-----	50 55 60	29 57 100	Bur oak, red pine
Foxhome-----	2	---	---	---	---
1444: Wurtsmith-----	85	Balsam fir----- Jack pine----- Quaking aspen----- Red pine----- White spruce-----	55 60 60 65 50	114 86 72 114 100	Eastern white pine, jack pine, red pine, white spruce

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
1444:					
Meehan-----	10	Balsam fir-----	55	114	Eastern white pine,
		Jack pine-----	55	72	jack pine, red
		Paper birch-----	55	57	pine, white spruce
		Quaking aspen-----	60	72	
		Red pine-----	60	100	
Clearriver-----	2	Balsam fir-----	55	114	Eastern white pine,
		Jack pine-----	55	72	jack pine, red
		Quaking aspen-----	60	72	pine, white spruce
		Red pine-----	65	114	
		White spruce-----	50	100	
Two Inlets-----	2	Balsam fir-----	50	100	Eastern white pine,
		Jack pine-----	50	72	jack pine, red
		Quaking aspen-----	55	57	pine
		Red pine-----	55	86	
Cormant-----	1	Balsam fir-----	50	100	Black ash, black
		Black ash-----	45	29	spruce, green ash
		Black spruce-----	45	43	
		Quaking aspen-----	60	72	
1808:					
Markey, ponded-----	90	---	---	---	---
Leafriver-----	4	---	---	---	---
Seelyeville, ponded-----	4	---	---	---	---
Cormant-----	2	Balsam fir-----	50	100	Black ash, black
		Black ash-----	45	29	spruce, green ash
		Black spruce-----	45	43	
		Quaking aspen-----	60	72	
1923B:					
Garnes, very stony-----	85	Balsam fir-----	65	129	Bur oak, eastern
		Black ash-----	55	29	white pine, red
		Bur oak-----	60	43	pine, white spruce
		Paper birch-----	65	72	
		Quaking aspen-----	70	86	
		Red pine-----	60	100	
		White spruce-----	60	114	
Chilgren-----	10	Balsam fir-----	60	114	Black ash, black
		Black ash-----	50	29	spruce, white
		Paper birch-----	60	72	spruce
		Quaking aspen-----	65	72	
		White spruce-----	55	100	
Eckvoll-----	3	Balsam fir-----	60	114	Bur oak, eastern
		Bur oak-----	55	43	white pine, red
		Paper birch-----	60	72	pine, white spruce
		Quaking aspen-----	65	72	
		Red pine-----	65	114	
		White spruce-----	60	114	
Pelan-----	2	Bur oak-----	50	29	Bur oak, red pine
		Quaking aspen-----	55	57	
		Red pine-----	60	100	

Table 12.--Forest Productivity--Continued

Map symbol and component name	Component percent	Potential productivity			Trees to manage
		Common trees	Site index	Volume of wood fiber cu ft/ac	
1984: Leafriver-----	90	---	---	---	---
Cormant-----	5	Balsam fir-----	50	100	Black ash, black spruce, green ash
		Black ash-----	45	29	
		Black spruce-----	45	43	
		Quaking aspen-----	60	72	
Markey-----	3	---	---	---	---
Redby-----	2	Balsam fir-----	55	114	Jack pine, red pine, white spruce
		Jack pine-----	55	72	
		Paper birch-----	55	57	
		Quaking aspen-----	60	72	
		Red pine-----	60	100	
		White spruce-----	55	100	

Table 13.--Forest Land Harvest Equipment Considerations

(Only the soils that support vegetation suitable for forest land management are listed. See text for a description of the considerations listed in this table.)

Map symbol and component name	Percent of map unit	Forest land harvest equipment considerations
48B:		
Hiwood-----	85	Poor traction (loose sandy material)
Redby-----	7	Wetness Poor traction (loose sandy material)
Clearriver-----	3	Poor traction (loose sandy material)
Cormant-----	3	Wetness Poor traction (loose sandy material)
Zimmerman-----	2	Poor traction (loose sandy material)
64:		
Ulen-----	85	Poor traction (loose sandy material)
Rosewood-----	10	Wetness
Redby-----	3	Wetness Poor traction (loose sandy material)
Rushlake-----	2	Poor traction (loose sandy material)
77:		
Garnes-----	85	Susceptible to rutting and wheel slippage
Chilgren-----	10	Wetness Susceptible to rutting and wheel slippage
Eckvoll-----	3	Poor traction (loose sandy material)
Pelan-----	2	No major considerations
111:		
Hangaard-----	90	Wetness
Deerwood-----	5	Wetness Susceptible to rutting and wheel slippage
Rushlake-----	3	Poor traction (loose sandy material)
Rosewood-----	2	Wetness
116:		
Redby-----	85	Wetness Poor traction (loose sandy material)
Cormant-----	8	Wetness Poor traction (loose sandy material)
Hiwood-----	6	Poor traction (loose sandy material)
Leafriver-----	1	Wetness Susceptible to rutting and wheel slippage
117:		
Cormant-----	85	Wetness Poor traction (loose sandy material)
Leafriver-----	7	Wetness Susceptible to rutting and wheel slippage

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land harvest equipment considerations
117:		
Epoufette-----	3	Wetness Poor traction (loose sandy material)
Redby-----	3	Wetness Poor traction (loose sandy material)
Grygla, depressional-----	2	Wetness Poor traction (loose sandy material)
133:		
Dalbo-----	85	Susceptible to rutting and wheel slippage
Mustinka-----	10	Wetness Susceptible to rutting and wheel slippage
Moranville-----	5	Poor traction (loose sandy material)
145:		
Enstrom-----	85	Poor traction (loose sandy material)
Grygla-----	10	Wetness Poor traction (loose sandy material)
Redby-----	4	Wetness Poor traction (loose sandy material)
Pelan-----	1	No major considerations
147:		
Spooner-----	85	Wetness Susceptible to rutting and wheel slippage Poor traction (loose sandy material)
Baudette-----	5	Susceptible to rutting and wheel slippage
Grygla-----	5	Wetness Poor traction (loose sandy material)
Sago-----	5	Wetness Susceptible to rutting and wheel slippage
158B:		
Zimmerman-----	85	Poor traction (loose sandy material)
Hiwood-----	6	Poor traction (loose sandy material)
Two Inlets-----	6	Poor traction (loose sandy material)
Redby-----	3	Wetness Poor traction (loose sandy material)
167B:		
Baudette-----	85	Susceptible to rutting and wheel slippage
Spooner-----	10	Wetness Susceptible to rutting and wheel slippage Poor traction (loose sandy material)
Moranville-----	5	Poor traction (loose sandy material)

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land harvest equipment considerations
191:		
Epoufette-----	85	Wetness Poor traction (loose sandy material)
Cormant-----	5	Wetness Poor traction (loose sandy material)
Leafriver-----	5	Wetness Susceptible to rutting and wheel slippage
Meehan-----	5	Wetness Poor traction (loose sandy material)
202:		
Meehan-----	85	Wetness Poor traction (loose sandy material)
Cormant-----	8	Wetness Poor traction (loose sandy material)
Wurtsmith-----	5	Poor traction (loose sandy material)
Leafriver-----	2	Wetness Susceptible to rutting and wheel slippage
205:		
Karlstad-----	85	Poor traction (loose sandy material)
Sahkahtay-----	7	Wetness Susceptible to rutting and wheel slippage Poor traction (loose sandy material)
Marquette-----	5	Poor traction (loose sandy material)
Redby-----	2	Wetness Poor traction (loose sandy material)
Pits, gravel-----	1	Not rated
242B:		
Marquette-----	85	Poor traction (loose sandy material)
Karlstad-----	14	Poor traction (loose sandy material)
Pits, gravel-----	1	Not rated
280:		
Pelan-----	85	No major considerations
Strandquist-----	10	Wetness Susceptible to rutting and wheel slippage
Garnes-----	3	Susceptible to rutting and wheel slippage
Marquette-----	1	Poor traction (loose sandy material)
Pits, gravel-----	1	Not rated
404:		
Chilgren-----	85	Wetness Susceptible to rutting and wheel slippage
Garnes-----	5	Susceptible to rutting and wheel slippage

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land harvest equipment considerations
404:		
Grygla-----	5	Wetness Poor traction (loose sandy material)
Haug-----	5	Wetness Susceptible to rutting and wheel slippage
481:		
Kratka-----	85	Wetness Poor traction (loose sandy material)
Northwood-----	5	Wetness Susceptible to rutting and wheel slippage
Percy-----	5	Wetness Susceptible to rutting and wheel slippage
Enstrom-----	3	Poor traction (loose sandy material)
Strandquist-----	2	Wetness Susceptible to rutting and wheel slippage
482:		
Grygla-----	85	Wetness Poor traction (loose sandy material)
Chilgren-----	5	Wetness Susceptible to rutting and wheel slippage
Grygla, depressional-----	5	Wetness Poor traction (loose sandy material)
Enstrom-----	3	Poor traction (loose sandy material)
Northwood-----	2	Wetness Susceptible to rutting and wheel slippage
534:		
Mooselake-----	90	Wetness Susceptible to rutting and wheel slippage
Bullwinkle-----	4	Wetness Susceptible to rutting and wheel slippage
Dora-----	3	Wetness Susceptible to rutting and wheel slippage
Tawas-----	3	Wetness Susceptible to rutting and wheel slippage
541:		
Rifle-----	90	Wetness Susceptible to rutting and wheel slippage
Tacoosh-----	10	Wetness Susceptible to rutting and wheel slippage
543:		
Markey-----	90	Wetness Susceptible to rutting and wheel slippage
Cormant-----	5	Wetness Poor traction (loose sandy material)

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land harvest equipment considerations
543: Seelyeville-----	5	Wetness Susceptible to rutting and wheel slippage
544: Cathro-----	90	Wetness Susceptible to rutting and wheel slippage
Percy, very cobbly-----	4	Wetness Susceptible to rutting and wheel slippage
Grygla-----	3	Wetness Poor traction (loose sandy material)
Seelyeville-----	3	Wetness Susceptible to rutting and wheel slippage
546: Lupton-----	90	Wetness Susceptible to rutting and wheel slippage
Bullwinkle-----	4	Wetness Susceptible to rutting and wheel slippage
Dora-----	3	Wetness Susceptible to rutting and wheel slippage
Tawas-----	3	Wetness Susceptible to rutting and wheel slippage
561: Bullwinkle-----	90	Wetness Susceptible to rutting and wheel slippage
Lupton-----	4	Wetness Susceptible to rutting and wheel slippage
Northwood, wooded-----	4	Wetness Susceptible to rutting and wheel slippage
Chilgren-----	2	Wetness Susceptible to rutting and wheel slippage
563: Northwood-----	90	Wetness Susceptible to rutting and wheel slippage
Grygla-----	4	Wetness Poor traction (loose sandy material)
Berner-----	3	Wetness Susceptible to rutting and wheel slippage
Strandquist-----	3	Wetness Susceptible to rutting and wheel slippage
565: Eckvoll-----	85	Poor traction (loose sandy material)
Chilgren-----	5	Wetness Susceptible to rutting and wheel slippage
Grygla-----	5	Wetness Poor traction (loose sandy material)

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land harvest equipment considerations
565: Hiwood-----	5	Poor traction (loose sandy material)
569: Wabanica-----	85	Wetness Susceptible to rutting and wheel slippage
Warroad-----	6	Wetness
Sax-----	4	Wetness Susceptible to rutting and wheel slippage
Grano-----	3	Wetness Susceptible to rutting and wheel slippage
Enstrom-----	2	Poor traction (loose sandy material)
570: Faunce-----	85	Poor traction (loose sandy material)
Clearriver-----	7	Poor traction (loose sandy material)
Zimmerman-----	4	Poor traction (loose sandy material)
Meehan-----	3	Wetness Poor traction (loose sandy material)
Pits, gravel-----	1	Not rated
583: Nereson-----	85	No major considerations
Percy-----	10	Wetness Susceptible to rutting and wheel slippage
Pelan-----	3	No major considerations
Foxhome-----	2	Poor traction (loose sandy material)
627: Tawas-----	90	Wetness Susceptible to rutting and wheel slippage
Leafriver-----	4	Wetness Susceptible to rutting and wheel slippage Poor traction (loose sandy material)
Lupton-----	4	Wetness Susceptible to rutting and wheel slippage
Cormant-----	2	Wetness Poor traction (loose sandy material)
630: Wildwood-----	90	Wetness Susceptible to rutting and wheel slippage
Boash-----	4	Wetness Susceptible to rutting and wheel slippage
Dora-----	4	Wetness Susceptible to rutting and wheel slippage

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land harvest equipment considerations
630: Espelie-----	2	Wetness Poor traction (loose sandy material)
643: Huot-----	85	No major considerations
Thiefriever-----	12	Wetness
Redby-----	3	Wetness Poor traction (loose sandy material)
645: Espelie-----	85	Wetness Poor traction (loose sandy material)
Grano-----	5	Wetness Susceptible to rutting and wheel slippage
Hilaire-----	5	No major considerations
Wildwood-----	5	Wetness Susceptible to rutting and wheel slippage
651: Thiefriever-----	85	Wetness
Grano-----	5	Wetness Susceptible to rutting and wheel slippage
Huot-----	5	No major considerations
Wildwood-----	5	Wetness Susceptible to rutting and wheel slippage
708: Rushlake-----	85	Poor traction (loose sandy material)
Corliss-----	6	Poor traction (loose sandy material)
Redby-----	5	Wetness Poor traction (loose sandy material)
Hangaard-----	3	Wetness
Pits, gravel-----	1	Not rated
721B: Corliss-----	85	Poor traction (loose sandy material)
Rushlake-----	10	Poor traction (loose sandy material)
Hangaard-----	4	Wetness
Pits, gravel-----	1	Not rated
733: Bernier-----	90	Wetness Susceptible to rutting and wheel slippage
Grygla-----	5	Wetness Poor traction (loose sandy material)

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land harvest equipment considerations
733: Seelyeville-----	5	Wetness Susceptible to rutting and wheel slippage
737: Mahkonce-----	85	Susceptible to rutting and wheel slippage
Auganaush-----	10	Wetness Susceptible to rutting and wheel slippage
Eckvoll-----	5	Poor traction (loose sandy material)
755: Woodslake-----	85	Wetness Susceptible to rutting and wheel slippage
Boash-----	8	Wetness Susceptible to rutting and wheel slippage
Wildwood-----	5	Wetness Susceptible to rutting and wheel slippage
Dora-----	2	Wetness Susceptible to rutting and wheel slippage
767: Auganaush-----	90	Wetness Susceptible to rutting and wheel slippage
Mustinka-----	5	Wetness Susceptible to rutting and wheel slippage
Wildwood-----	3	Wetness Susceptible to rutting and wheel slippage
Mahkonce-----	2	Susceptible to rutting and wheel slippage
794: Clearriver-----	85	Poor traction (loose sandy material)
Hiwood-----	7	Poor traction (loose sandy material)
Meehan-----	5	Wetness Poor traction (loose sandy material)
Faunce-----	3	Poor traction (loose sandy material)
1002: Fluvaquents, frequently flooded-----	90	Flooding Wetness Susceptible to rutting and wheel slippage
Seelyeville-----	6	Wetness Susceptible to rutting and wheel slippage
Hapludalfs-----	2	Slope Susceptible to rutting and wheel slippage
Water-----	2	Not rated

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land harvest equipment considerations
1030:		
Pits, gravel-----	75	Not rated
Udipsamments-----	20	Slope Poor traction (loose sandy material)
Corliss-----	2	Poor traction (loose sandy material)
Karlstad-----	2	Poor traction (loose sandy material)
Hangaard-----	1	Wetness
1067:		
Fluvaquents, frequently flooded-----	60	Flooding Wetness Susceptible to rutting and wheel slippage
Hapludalfs-----	30	Slope Susceptible to rutting and wheel slippage
Seelyeville-----	5	Wetness Susceptible to rutting and wheel slippage
Water-----	5	Not rated
1133B:		
Skime-----	85	Poor traction (loose sandy material)
Hiwood-----	10	Poor traction (loose sandy material)
Zippel-----	5	Wetness
1179B:		
Moranville-----	85	Poor traction (loose sandy material)
Baudette-----	5	Susceptible to rutting and wheel slippage
Hiwood-----	5	Poor traction (loose sandy material)
Spooner-----	5	Wetness Susceptible to rutting and wheel slippage Poor traction (loose sandy material)
1181:		
Rosewood-----	50	Wetness
Ulen-----	40	Poor traction (loose sandy material)
Redby-----	5	Wetness Poor traction (loose sandy material)
Deerwood-----	3	Wetness Susceptible to rutting and wheel slippage
Syrene-----	2	Wetness
1182:		
Warroad-----	85	Wetness
Wabanica-----	7	Wetness Susceptible to rutting and wheel slippage
Enstrom-----	5	Poor traction (loose sandy material)

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land harvest equipment considerations
1182: Sax-----	3	Wetness Susceptible to rutting and wheel slippage
1187: Dora, ponded-----	90	Wetness Susceptible to rutting and wheel slippage
Seelyeville, ponded-----	4	Wetness Susceptible to rutting and wheel slippage
Wildwood-----	4	Wetness Susceptible to rutting and wheel slippage
Boash-----	2	Wetness Susceptible to rutting and wheel slippage
1191: Sahkahtay-----	85	Wetness Susceptible to rutting and wheel slippage Poor traction (loose sandy material)
Cormant-----	5	Wetness Poor traction (loose sandy material)
Deerwood-----	5	Wetness Susceptible to rutting and wheel slippage
Karlstad-----	3	Poor traction (loose sandy material)
Redby-----	2	Wetness Poor traction (loose sandy material)
1206: Cormant-----	55	Wetness Poor traction (loose sandy material)
Redby-----	35	Wetness Poor traction (loose sandy material)
Hiwood-----	5	Poor traction (loose sandy material)
Leafriver-----	5	Wetness Susceptible to rutting and wheel slippage
1214: Mustinka-----	90	Wetness Susceptible to rutting and wheel slippage
Espelie-----	4	Wetness Poor traction (loose sandy material)
Wildwood-----	4	Wetness Susceptible to rutting and wheel slippage
Dalbo-----	2	Susceptible to rutting and wheel slippage
1274B: Redby-----	40	Wetness Poor traction (loose sandy material)
Hiwood-----	30	Poor traction (loose sandy material)

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land harvest equipment considerations
1274B:		
Leafriver, wooded-----	15	Wetness Susceptible to rutting and wheel slippage Poor traction (loose sandy material)
Clearriver-----	5	Poor traction (loose sandy material)
Cormant-----	5	Wetness Poor traction (loose sandy material)
Zimmerman-----	5	Poor traction (loose sandy material)
1305:		
Hilaire-----	85	No major considerations
Espelie-----	11	Wetness Poor traction (loose sandy material)
Grano-----	2	Wetness Susceptible to rutting and wheel slippage
Redby-----	2	Wetness Poor traction (loose sandy material)
1314:		
Tacoosh-----	90	Wetness Susceptible to rutting and wheel slippage
Rifle-----	8	Wetness Susceptible to rutting and wheel slippage
Sax-----	2	Wetness Susceptible to rutting and wheel slippage
1327B:		
Karlstad-----	65	Poor traction (loose sandy material)
Marquette-----	25	Poor traction (loose sandy material)
Sahkahtay-----	7	Wetness Susceptible to rutting and wheel slippage Poor traction (loose sandy material)
Redby-----	3	Wetness Poor traction (loose sandy material)
1328:		
Northwood, wooded-----	90	Wetness Susceptible to rutting and wheel slippage
Berner, wooded-----	5	Wetness Susceptible to rutting and wheel slippage
Grygla-----	5	Wetness Poor traction (loose sandy material)
1333:		
Dora, wooded-----	90	Wetness Susceptible to rutting and wheel slippage
Lupton-----	4	Wetness Susceptible to rutting and wheel slippage

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land harvest equipment considerations
1333: Wildwood-----	4	Wetness Susceptible to rutting and wheel slippage
Auganaush-----	2	Wetness Susceptible to rutting and wheel slippage
1399B: Two Inlets-----	85	Poor traction (loose sandy material)
Wurtsmith-----	6	Poor traction (loose sandy material)
Zimmerman-----	6	Poor traction (loose sandy material)
Meehan-----	3	Wetness Poor traction (loose sandy material)
1401: Grygla, depressional-----	90	Wetness Poor traction (loose sandy material)
Northwood, wooded-----	5	Wetness Susceptible to rutting and wheel slippage
Chilgren-----	3	Wetness Susceptible to rutting and wheel slippage
Grygla-----	2	Wetness Poor traction (loose sandy material)
1402: Leafriver, wooded-----	90	Wetness Susceptible to rutting and wheel slippage Poor traction (loose sandy material)
Cormant-----	4	Wetness Poor traction (loose sandy material)
Tawas-----	4	Wetness Susceptible to rutting and wheel slippage
Redby-----	2	Wetness Poor traction (loose sandy material)
1404: Berner, wooded-----	90	Wetness Susceptible to rutting and wheel slippage
Lupton-----	4	Wetness Susceptible to rutting and wheel slippage
Northwood, wooded-----	4	Wetness Susceptible to rutting and wheel slippage
Grygla-----	2	Wetness Poor traction (loose sandy material)
1414: Nereson, very cobbly-----	85	No major considerations
Percy, very cobbly-----	10	Wetness Susceptible to rutting and wheel slippage

Table 13.--Forest Land Harvest Equipment Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land harvest equipment considerations
1414:		
Pelan-----	3	No major considerations
Foxhome-----	2	Poor traction (loose sandy material)
1444:		
Wurtsmith-----	85	Poor traction (loose sandy material)
Meehan-----	10	Wetness Poor traction (loose sandy material)
Clearriver-----	2	Poor traction (loose sandy material)
Two Inlets-----	2	Poor traction (loose sandy material)
Cormant-----	1	Wetness Poor traction (loose sandy material)
1808:		
Markey, ponded-----	90	Wetness Susceptible to rutting and wheel slippage
Leafriver-----	4	Wetness Susceptible to rutting and wheel slippage
Seelyeville, ponded-----	4	Wetness Susceptible to rutting and wheel slippage
Cormant-----	2	Wetness Poor traction (loose sandy material)
1923B:		
Garnes, very stony-----	85	Susceptible to rutting and wheel slippage
Chilgren-----	10	Wetness Susceptible to rutting and wheel slippage
Eckvoll-----	3	Poor traction (loose sandy material)
Pelan-----	2	No major considerations
1984:		
Leafriver-----	90	Wetness Susceptible to rutting and wheel slippage
Cormant-----	5	Wetness Poor traction (loose sandy material)
Markey-----	3	Wetness Susceptible to rutting and wheel slippage
Redby-----	2	Wetness Poor traction (loose sandy material)

Table 14.--Forest Haul Road Considerations

(Only the soils that support vegetation suitable for forest land management are listed. See text for a description of the considerations listed in this table.)

Map symbol and component name	Percent of map unit	Forest haul road considerations
48B:		
Hiwood-----	85	No major considerations
Redby-----	7	Wetness
Clearriver-----	3	No major considerations
Cormant-----	3	Wetness
Zimmerman-----	2	No major considerations
64:		
Ulen-----	85	No major considerations
Rosewood-----	10	Wetness
Redby-----	3	Wetness
Rushlake-----	2	No major considerations
77:		
Garnes-----	85	Low bearing strength
Chilgren-----	10	Wetness Low bearing strength
Eckvoll-----	3	No major considerations
Pelan-----	2	No major considerations
111:		
Hangaard-----	90	Wetness
Deerwood-----	5	Wetness Low bearing strength
Rushlake-----	3	No major considerations
Rosewood-----	2	Wetness
116:		
Redby-----	85	Wetness
Cormant-----	8	Wetness
Hiwood-----	6	No major considerations
Leafriver-----	1	Wetness Low bearing strength
117:		
Cormant-----	85	Wetness
Leafriver-----	7	Wetness Low bearing strength
Epoufette-----	3	Wetness
Redby-----	3	Wetness
Grygla, depressional-----	2	Wetness

Table 14.--Forest Haul Road Considerations--Continued

Map symbol and component name	Percent of map unit	Forest haul road considerations
133:		
Dalbo-----	85	Low bearing strength
Mustinka-----	10	Wetness Low bearing strength
Moranville-----	5	No major considerations
145:		
Enstrom-----	85	No major considerations
Grygla-----	10	Wetness
Redby-----	4	Wetness
Pelan-----	1	No major considerations
147:		
Spooner-----	85	Wetness Low bearing strength
Baudette-----	5	Low bearing strength
Grygla-----	5	Wetness
Sago-----	5	Wetness Low bearing strength
158B:		
Zimmerman-----	85	No major considerations
Hiwood-----	6	No major considerations
Two Inlets-----	6	No major considerations
Redby-----	3	Wetness
167B:		
Baudette-----	85	Low bearing strength
Spooner-----	10	Wetness Low bearing strength
Moranville-----	5	No major considerations
191:		
Epoufette-----	85	Wetness
Cormant-----	5	Wetness
Leafriver-----	5	Wetness Low bearing strength
Meehan-----	5	Wetness
202:		
Meehan-----	85	Wetness
Cormant-----	8	Wetness
Wurtsmith-----	5	No major considerations
Leafriver-----	2	Wetness Low bearing strength

Table 14.--Forest Haul Road Considerations--Continued

Map symbol and component name	Percent of map unit	Forest haul road considerations
205:		
Karlstad-----	85	No major considerations
Sahkahtay-----	7	Wetness Low bearing strength
Marquette-----	5	Slope
Redby-----	2	Wetness
Pits, gravel-----	1	Not rated
242B:		
Marquette-----	85	Slope
Karlstad-----	14	No major considerations
Pits, gravel-----	1	Not rated
280:		
Pelan-----	85	No major considerations
Strandquist-----	10	Wetness Low bearing strength
Garnes-----	3	Low bearing strength
Marquette-----	1	Slope
Pits, gravel-----	1	Not rated
404:		
Chilgren-----	85	Wetness Low bearing strength
Garnes-----	5	Low bearing strength
Grygla-----	5	Wetness
Haug-----	5	Wetness Low bearing strength
481:		
Kratka-----	85	Wetness
Northwood-----	5	Wetness Low bearing strength
Percy-----	5	Wetness Low bearing strength
Enstrom-----	3	No major considerations
Strandquist-----	2	Wetness Low bearing strength
482:		
Grygla-----	85	Wetness
Chilgren-----	5	Wetness Low bearing strength
Grygla, depressional-----	5	Wetness

Table 14.--Forest Haul Road Considerations--Continued

Map symbol and component name	Percent of map unit	Forest haul road considerations
482:		
Enstrom-----	3	No major considerations
Northwood-----	2	Wetness Low bearing strength
534:		
Mooselake-----	90	Wetness Low bearing strength
Bullwinkle-----	4	Wetness Low bearing strength
Dora-----	3	Wetness Low bearing strength
Tawas-----	3	Wetness Low bearing strength
541:		
Rifle-----	90	Wetness Low bearing strength
Tacoosh-----	10	Wetness Low bearing strength
543:		
Markey-----	90	Wetness Low bearing strength
Cormant-----	5	Wetness
Seelyeville-----	5	Wetness Low bearing strength
544:		
Cathro-----	90	Wetness Low bearing strength
Percy, very cobbly-----	4	Wetness Low bearing strength
Grygla-----	3	Wetness
Seelyeville-----	3	Wetness Low bearing strength
546:		
Lupton-----	90	Wetness Low bearing strength
Bullwinkle-----	4	Wetness Low bearing strength
Dora-----	3	Wetness Low bearing strength
Tawas-----	3	Wetness Low bearing strength

Table 14.--Forest Haul Road Considerations--Continued

Map symbol and component name	Percent of map unit	Forest haul road considerations
561:		
Bullwinkle-----	90	Wetness Low bearing strength
Lupton-----	4	Wetness Low bearing strength
Northwood, wooded-----	4	Wetness Low bearing strength
Chilgren-----	2	Wetness Low bearing strength
563:		
Northwood-----	90	Wetness Low bearing strength
Grygla-----	4	Wetness
Berner-----	3	Wetness Low bearing strength
Strandquist-----	3	Wetness Low bearing strength
565:		
Eckvoll-----	85	No major considerations
Chilgren-----	5	Wetness Low bearing strength
Grygla-----	5	Wetness
Hiwood-----	5	No major considerations
569:		
Wabanica-----	85	Wetness Low bearing strength
Warroad-----	6	Wetness
Sax-----	4	Wetness Low bearing strength
Grano-----	3	Wetness Low bearing strength
Enstrom-----	2	No major considerations
570:		
Faunce-----	85	No major considerations
Clearriver-----	7	No major considerations
Zimmerman-----	4	No major considerations
Meehan-----	3	Wetness
Pits, gravel-----	1	Not rated

Table 14.--Forest Haul Road Considerations--Continued

Map symbol and component name	Percent of map unit	Forest haul road considerations
583:		
Nereson-----	85	No major considerations
Percy-----	10	Wetness Low bearing strength
Pelan-----	3	No major considerations
Foxhome-----	2	No major considerations
627:		
Tawas-----	90	Wetness Low bearing strength
Leafriver-----	4	Wetness Low bearing strength
Lupton-----	4	Wetness Low bearing strength
Cormant-----	2	Wetness
630:		
Wildwood-----	90	Wetness Low bearing strength
Boash-----	4	Wetness Low bearing strength
Dora-----	4	Wetness Low bearing strength
Espelie-----	2	Wetness
643:		
Huot-----	85	No major considerations
Thiefriever-----	12	Wetness
Redby-----	3	Wetness
645:		
Espelie-----	85	Wetness
Grano-----	5	Wetness Low bearing strength
Hilaire-----	5	No major considerations
Wildwood-----	5	Wetness Low bearing strength
651:		
Thiefriever-----	85	Wetness
Grano-----	5	Wetness Low bearing strength
Huot-----	5	No major considerations
Wildwood-----	5	Wetness Low bearing strength

Table 14.--Forest Haul Road Considerations--Continued

Map symbol and component name	Percent of map unit	Forest haul road considerations
708:		
Rushlake-----	85	No major considerations
Corliss-----	6	No major considerations
Redby-----	5	Wetness
Hangaard-----	3	Wetness
Pits, gravel-----	1	Not rated
721B:		
Corliss-----	85	No major considerations
Rushlake-----	10	No major considerations
Hangaard-----	4	Wetness
Pits, gravel-----	1	Not rated
733:		
Berner-----	90	Wetness Low bearing strength
Grygla-----	5	Wetness
Seelyeville-----	5	Wetness Low bearing strength
737:		
Mahkonce-----	85	Low bearing strength
Auganaush-----	10	Wetness Low bearing strength
Eckvoll-----	5	No major considerations
755:		
Woodslake-----	85	Wetness Low bearing strength
Boash-----	8	Wetness Low bearing strength
Wildwood-----	5	Wetness Low bearing strength
Dora-----	2	Wetness Low bearing strength
767:		
Auganaush-----	90	Wetness Low bearing strength
Mustinka-----	5	Wetness Low bearing strength
Wildwood-----	3	Wetness Low bearing strength
Mahkonce-----	2	Low bearing strength

Table 14.--Forest Haul Road Considerations--Continued

Map symbol and component name	Percent of map unit	Forest haul road considerations
794:		
Clearriver-----	85	No major considerations
Hiwood-----	7	No major considerations
Meehan-----	5	Wetness
Faunce-----	3	No major considerations
1002:		
Fluvaquents, frequently flooded-----	90	Flooding Wetness Low bearing strength
Seelyeville-----	6	Wetness Low bearing strength
HapludalFs-----	2	Slope Low bearing strength
Water-----	2	Not rated
1030:		
Pits, gravel-----	75	Not rated
Udipsamments-----	20	Slope
Corliss-----	2	No major considerations
Karlstad-----	2	No major considerations
Hangaard-----	1	Wetness
1067:		
Fluvaquents, frequently flooded-----	60	Flooding Wetness Low bearing strength
HapludalFs-----	30	Slope Low bearing strength
Seelyeville-----	5	Wetness Low bearing strength
Water-----	5	Not rated
1133B:		
Skime-----	85	No major considerations
Hiwood-----	10	No major considerations
Zippel-----	5	Wetness
1179B:		
Moranville-----	85	No major considerations
Baudette-----	5	Low bearing strength
Hiwood-----	5	No major considerations
Spooner-----	5	Wetness Low bearing strength

Table 14.--Forest Haul Road Considerations--Continued

Map symbol and component name	Percent of map unit	Forest haul road considerations
1181:		
Rosewood-----	50	Wetness
Ulen-----	40	No major considerations
Redby-----	5	Wetness
Deerwood-----	3	Wetness Low bearing strength
Syrene-----	2	Wetness
1182:		
Warroad-----	85	Wetness
Wabanica-----	7	Wetness Low bearing strength
Enstrom-----	5	No major considerations
Sax-----	3	Wetness Low bearing strength
1187:		
Dora, ponded-----	90	Wetness Low bearing strength
Seelyeville, ponded-----	4	Wetness Low bearing strength
Wildwood-----	4	Wetness Low bearing strength
Boash-----	2	Wetness Low bearing strength
1191:		
Sahkahtay-----	85	Wetness Low bearing strength
Cormant-----	5	Wetness
Deerwood-----	5	Wetness Low bearing strength
Karlstad-----	3	No major considerations
Redby-----	2	Wetness
1206:		
Cormant-----	55	Wetness
Redby-----	35	Wetness
Hiwood-----	5	No major considerations
Leafriver-----	5	Wetness Low bearing strength
1214:		
Mustinka-----	90	Wetness Low bearing strength
Espelie-----	4	Wetness

Table 14.--Forest Haul Road Considerations--Continued

Map symbol and component name	Percent of map unit	Forest haul road considerations
1214:		
Wildwood-----	4	Wetness Low bearing strength
Dalbo-----	2	Low bearing strength
1274B:		
Redby-----	40	Wetness
Hiwood-----	30	No major considerations
Leafriver, wooded-----	15	Wetness Low bearing strength
Clearriver-----	5	No major considerations
Cormant-----	5	Wetness
Zimmerman-----	5	No major considerations
1305:		
Hilaire-----	85	No major considerations
Espelie-----	11	Wetness
Grano-----	2	Wetness Low bearing strength
Redby-----	2	Wetness
1314:		
Tacoosh-----	90	Wetness Low bearing strength
Rifle-----	8	Wetness Low bearing strength
Sax-----	2	Wetness Low bearing strength
1327B:		
Karlstad-----	65	No major considerations
Marquette-----	25	Slope
Sahkahtay-----	7	Wetness Low bearing strength
Redby-----	3	Wetness
1328:		
Northwood, wooded-----	90	Wetness Low bearing strength
Berner, wooded-----	5	Wetness Low bearing strength
Grygla-----	5	Wetness
1333:		
Dora, wooded-----	90	Wetness Low bearing strength

Table 14.--Forest Haul Road Considerations--Continued

Map symbol and component name	Percent of map unit	Forest haul road considerations
1333:		
Lupton-----	4	Wetness Low bearing strength
Wildwood-----	4	Wetness Low bearing strength
Auganaush-----	2	Wetness Low bearing strength
1399B:		
Two Inlets-----	85	No major considerations
Wurtsmith-----	6	No major considerations
Zimmerman-----	6	No major considerations
Meehan-----	3	Wetness
1401:		
Grygla, depressional-----	90	Wetness
Northwood, wooded-----	5	Wetness Low bearing strength
Chilgren-----	3	Wetness Low bearing strength
Grygla-----	2	Wetness
1402:		
Leafriver, wooded-----	90	Wetness Low bearing strength
Cormant-----	4	Wetness
Tawas-----	4	Wetness Low bearing strength
Redby-----	2	Wetness
1404:		
Berner, wooded-----	90	Wetness Low bearing strength
Lupton-----	4	Wetness Low bearing strength
Northwood, wooded-----	4	Wetness Low bearing strength
Grygla-----	2	Wetness
1414:		
Nereson, very cobbly-----	85	No major considerations
Percy, very cobbly-----	10	Wetness Low bearing strength
Pelan-----	3	No major considerations
Foxhome-----	2	No major considerations

Table 14.--Forest Haul Road Considerations--Continued

Map symbol and component name	Percent of map unit	Forest haul road considerations
1444:		
Wurtsmith-----	85	No major considerations
Meehan-----	10	Wetness
Clearriver-----	2	No major considerations
Two Inlets-----	2	No major considerations
Cormant-----	1	Wetness
1808:		
Markey, ponded-----	90	Wetness Low bearing strength
Leafriver-----	4	Wetness Low bearing strength
Seelyeville, ponded-----	4	Wetness Low bearing strength
Cormant-----	2	Wetness
1923B:		
Garnes, very stony-----	85	Low bearing strength
Chilgren-----	10	Wetness Low bearing strength
Eckvoll-----	3	No major considerations
Pelan-----	2	No major considerations
1984:		
Leafriver-----	90	Wetness Low bearing strength
Cormant-----	5	Wetness
Markey-----	3	Wetness Low bearing strength
Redby-----	2	Wetness

Table 15.--Forest Log Landing Considerations

(Only the soils that support vegetation suitable for forest land management are listed. See text for a description of the considerations listed in this table.)

Map symbol and component name	Percent of map unit	Forest log landing considerations
48B:		
Hiwood-----	85	No major considerations
Redby-----	7	Wetness
Clearriver-----	3	No major considerations
Cormant-----	3	Wetness
Zimmerman-----	2	No major considerations
64:		
Ulen-----	85	No major considerations
Rosewood-----	10	Wetness
Redby-----	3	Wetness
Rushlake-----	2	No major considerations
77:		
Garnes-----	85	Susceptible to rutting and wheel slippage
Chilgren-----	10	Wetness Susceptible to rutting and wheel slippage
Eckvoll-----	3	No major considerations
Pelan-----	2	No major considerations
111:		
Hangaard-----	90	Wetness
Deerwood-----	5	Wetness Susceptible to rutting and wheel slippage
Rushlake-----	3	No major considerations
Rosewood-----	2	Wetness
116:		
Redby-----	85	Wetness
Cormant-----	8	Wetness
Hiwood-----	6	No major considerations
Leafriver-----	1	Wetness Susceptible to rutting and wheel slippage
117:		
Cormant-----	85	Wetness
Leafriver-----	7	Wetness Susceptible to rutting and wheel slippage
Epoufette-----	3	Wetness
Redby-----	3	Wetness
Grygla, depressional-----	2	Wetness

Table 15.--Forest Log Landing Considerations--Continued

Map symbol and component name	Percent of map unit	Forest log landing considerations
133:		
Dalbo-----	85	Susceptible to rutting and wheel slippage
Mustinka-----	10	Wetness Susceptible to rutting and wheel slippage
Moranville-----	5	No major considerations
145:		
Enstrom-----	85	No major considerations
Grygla-----	10	Wetness
Redby-----	4	Wetness
Pelan-----	1	No major considerations
147:		
Spooner-----	85	Wetness Susceptible to rutting and wheel slippage
Baudette-----	5	Susceptible to rutting and wheel slippage
Grygla-----	5	Wetness
Sago-----	5	Wetness Susceptible to rutting and wheel slippage
158B:		
Zimmerman-----	85	No major considerations
Hiwood-----	6	No major considerations
Two Inlets-----	6	No major considerations
Redby-----	3	Wetness
167B:		
Baudette-----	85	Susceptible to rutting and wheel slippage
Spooner-----	10	Wetness Susceptible to rutting and wheel slippage
Moranville-----	5	No major considerations
191:		
Epoufette-----	85	Wetness
Cormant-----	5	Wetness
Leafriver-----	5	Wetness Susceptible to rutting and wheel slippage
Meehan-----	5	Wetness
202:		
Meehan-----	85	Wetness
Cormant-----	8	Wetness
Wurtsmith-----	5	No major considerations
Leafriver-----	2	Wetness Susceptible to rutting and wheel slippage

Table 15.--Forest Log Landing Considerations--Continued

Map symbol and component name	Percent of map unit	Forest log landing considerations
205:		
Karlstad-----	85	No major considerations
Sahkahtay-----	7	Wetness Susceptible to rutting and wheel slippage
Marquette-----	5	No major considerations
Redby-----	2	Wetness
Pits, gravel-----	1	Not rated
242B:		
Marquette-----	85	No major considerations
Karlstad-----	14	No major considerations
Pits, gravel-----	1	Not rated
280:		
Pelan-----	85	No major considerations
Strandquist-----	10	Wetness Susceptible to rutting and wheel slippage
Garnes-----	3	Susceptible to rutting and wheel slippage
Marquette-----	1	No major considerations
Pits, gravel-----	1	Not rated
404:		
Chilgren-----	85	Wetness Susceptible to rutting and wheel slippage
Garnes-----	5	Susceptible to rutting and wheel slippage
Grygla-----	5	Wetness
Haug-----	5	Wetness Susceptible to rutting and wheel slippage
481:		
Kratka-----	85	Wetness
Northwood-----	5	Wetness Susceptible to rutting and wheel slippage
Percy-----	5	Wetness Susceptible to rutting and wheel slippage
Enstrom-----	3	No major considerations
Strandquist-----	2	Wetness Susceptible to rutting and wheel slippage
482:		
Grygla-----	85	Wetness
Chilgren-----	5	Wetness Susceptible to rutting and wheel slippage
Grygla, depression-----	5	Wetness

Table 15.--Forest Log Landing Considerations--Continued

Map symbol and component name	Percent of map unit	Forest log landing considerations
482:		
Enstrom-----	3	No major considerations
Northwood-----	2	Wetness Susceptible to rutting and wheel slippage
534:		
Mooselake-----	90	Wetness Susceptible to rutting and wheel slippage
Bullwinkle-----	4	Wetness Susceptible to rutting and wheel slippage
Dora-----	3	Wetness Susceptible to rutting and wheel slippage
Tawas-----	3	Wetness Susceptible to rutting and wheel slippage
541:		
Rifle-----	90	Wetness Susceptible to rutting and wheel slippage
Tacoosh-----	10	Wetness Susceptible to rutting and wheel slippage
543:		
Markey-----	90	Wetness Susceptible to rutting and wheel slippage
Cormant-----	5	Wetness
Seelyeville-----	5	Wetness Susceptible to rutting and wheel slippage
544:		
Cathro-----	90	Wetness Susceptible to rutting and wheel slippage
Percy, very cobbly-----	4	Wetness Susceptible to rutting and wheel slippage
Grygla-----	3	Wetness
Seelyeville-----	3	Wetness Susceptible to rutting and wheel slippage
546:		
Lupton-----	90	Wetness Susceptible to rutting and wheel slippage
Bullwinkle-----	4	Wetness Susceptible to rutting and wheel slippage
Dora-----	3	Wetness Susceptible to rutting and wheel slippage
Tawas-----	3	Wetness Susceptible to rutting and wheel slippage

Table 15.--Forest Log Landing Considerations--Continued

Map symbol and component name	Percent of map unit	Forest log landing considerations
561:		
Bullwinkle-----	90	Wetness Susceptible to rutting and wheel slippage
Lupton-----	4	Wetness Susceptible to rutting and wheel slippage
Northwood, wooded-----	4	Wetness Susceptible to rutting and wheel slippage
Chilgren-----	2	Wetness Susceptible to rutting and wheel slippage
563:		
Northwood-----	90	Wetness Susceptible to rutting and wheel slippage
Grygla-----	4	Wetness
Berner-----	3	Wetness Susceptible to rutting and wheel slippage
Strandquist-----	3	Wetness Susceptible to rutting and wheel slippage
565:		
Eckvoll-----	85	No major considerations
Chilgren-----	5	Wetness Susceptible to rutting and wheel slippage
Grygla-----	5	Wetness
Hiwood-----	5	No major considerations
569:		
Wabanica-----	85	Wetness Susceptible to rutting and wheel slippage
Warroad-----	6	Wetness
Sax-----	4	Wetness Susceptible to rutting and wheel slippage
Grano-----	3	Wetness Susceptible to rutting and wheel slippage
Enstrom-----	2	No major considerations
570:		
Faunce-----	85	No major considerations
Clearriver-----	7	No major considerations
Zimmerman-----	4	No major considerations
Meehan-----	3	Wetness
Pits, gravel-----	1	Not rated

Table 15.--Forest Log Landing Considerations--Continued

Map symbol and component name	Percent of map unit	Forest log landing considerations
583:		
Nereson-----	85	No major considerations
Percy-----	10	Wetness Susceptible to rutting and wheel slippage
Pelan-----	3	No major considerations
Foxhome-----	2	No major considerations
627:		
Tawas-----	90	Wetness Susceptible to rutting and wheel slippage
Leafriver-----	4	Wetness Susceptible to rutting and wheel slippage
Lupton-----	4	Wetness Susceptible to rutting and wheel slippage
Cormant-----	2	Wetness
630:		
Wildwood-----	90	Wetness Susceptible to rutting and wheel slippage
Boash-----	4	Wetness Susceptible to rutting and wheel slippage
Dora-----	4	Wetness Susceptible to rutting and wheel slippage
Espelie-----	2	Wetness
643:		
Huot-----	85	No major considerations
Thiefriever-----	12	Wetness
Redby-----	3	Wetness
645:		
Espelie-----	85	Wetness
Grano-----	5	Wetness Susceptible to rutting and wheel slippage
Hilaire-----	5	No major considerations
Wildwood-----	5	Wetness Susceptible to rutting and wheel slippage
651:		
Thiefriever-----	85	Wetness
Grano-----	5	Wetness Susceptible to rutting and wheel slippage
Huot-----	5	No major considerations
Wildwood-----	5	Wetness Susceptible to rutting and wheel slippage

Table 15.--Forest Log Landing Considerations--Continued

Map symbol and component name	Percent of map unit	Forest log landing considerations
708:		
Rushlake-----	85	No major considerations
Corliss-----	6	No major considerations
Redby-----	5	Wetness
Hangaard-----	3	Wetness
Pits, gravel-----	1	Not rated
721B:		
Corliss-----	85	No major considerations
Rushlake-----	10	No major considerations
Hangaard-----	4	Wetness
Pits, gravel-----	1	Not rated
733:		
Berner-----	90	Wetness Susceptible to rutting and wheel slippage
Grygla-----	5	Wetness
Seelyeville-----	5	Wetness Susceptible to rutting and wheel slippage
737:		
Mahkonce-----	85	Susceptible to rutting and wheel slippage
Auganaush-----	10	Wetness Susceptible to rutting and wheel slippage
Eckvoll-----	5	No major considerations
755:		
Woodslake-----	85	Wetness Susceptible to rutting and wheel slippage
Boash-----	8	Wetness Susceptible to rutting and wheel slippage
Wildwood-----	5	Wetness Susceptible to rutting and wheel slippage
Dora-----	2	Wetness Susceptible to rutting and wheel slippage
767:		
Auganaush-----	90	Wetness Susceptible to rutting and wheel slippage
Mustinka-----	5	Wetness Susceptible to rutting and wheel slippage
Wildwood-----	3	Wetness Susceptible to rutting and wheel slippage
Mahkonce-----	2	Susceptible to rutting and wheel slippage

Table 15.--Forest Log Landing Considerations--Continued

Map symbol and component name	Percent of map unit	Forest log landing considerations
794:		
Clearriver-----	85	No major considerations
Hiwood-----	7	No major considerations
Meehan-----	5	Wetness
Faunce-----	3	No major considerations
1002:		
Fluvaquents, frequently flooded-----	90	Flooding Wetness Susceptible to rutting and wheel slippage
Seelyeville-----	6	Wetness Susceptible to rutting and wheel slippage
Hapludalfs-----	2	Slope Susceptible to rutting and wheel slippage
Water-----	2	Not rated
1030:		
Pits, gravel-----	75	Not rated
Udipsamments-----	20	Slope
Corliss-----	2	No major considerations
Karlstad-----	2	No major considerations
Hangaard-----	1	Wetness
1067:		
Fluvaquents, frequently flooded-----	60	Flooding Wetness Susceptible to rutting and wheel slippage
Hapludalfs-----	30	Slope Susceptible to rutting and wheel slippage
Seelyeville-----	5	Wetness Susceptible to rutting and wheel slippage
Water-----	5	Not rated
1133B:		
Skime-----	85	No major considerations
Hiwood-----	10	No major considerations
Zippel-----	5	Wetness
1179B:		
Moranville-----	85	No major considerations
Baudette-----	5	Susceptible to rutting and wheel slippage
Hiwood-----	5	No major considerations
Spooner-----	5	Wetness Susceptible to rutting and wheel slippage

Table 15.--Forest Log Landing Considerations--Continued

Map symbol and component name	Percent of map unit	Forest log landing considerations
1181:		
Rosewood-----	50	Wetness
Ulen-----	40	No major considerations
Redby-----	5	Wetness
Deerwood-----	3	Wetness Susceptible to rutting and wheel slippage
Syrene-----	2	Wetness
1182:		
Warroad-----	85	Wetness
Wabanica-----	7	Wetness Susceptible to rutting and wheel slippage
Enstrom-----	5	No major considerations
Sax-----	3	Wetness Susceptible to rutting and wheel slippage
1187:		
Dora, ponded-----	90	Wetness Susceptible to rutting and wheel slippage
Seelyeville, ponded-----	4	Wetness Susceptible to rutting and wheel slippage
Wildwood-----	4	Wetness Susceptible to rutting and wheel slippage
Boash-----	2	Wetness Susceptible to rutting and wheel slippage
1191:		
Sahkahtay-----	85	Wetness Susceptible to rutting and wheel slippage
Cormant-----	5	Wetness
Deerwood-----	5	Wetness Susceptible to rutting and wheel slippage
Karlstad-----	3	No major considerations
Redby-----	2	Wetness
1206:		
Cormant-----	55	Wetness
Redby-----	35	Wetness
Hiwood-----	5	No major considerations
Leafriver-----	5	Wetness Susceptible to rutting and wheel slippage
1214:		
Mustinka-----	90	Wetness Susceptible to rutting and wheel slippage
Espelie-----	4	Wetness

Table 15.--Forest Log Landing Considerations--Continued

Map symbol and component name	Percent of map unit	Forest log landing considerations
1214: Wildwood-----	4	Wetness Susceptible to rutting and wheel slippage
Dalbo-----	2	Susceptible to rutting and wheel slippage
1274B: Redby-----	40	Wetness
Hiwood-----	30	No major considerations
Leafriver, wooded-----	15	Wetness Susceptible to rutting and wheel slippage
Clearriver-----	5	No major considerations
Cormant-----	5	Wetness
Zimmerman-----	5	No major considerations
1305: Hilaire-----	85	No major considerations
Espelie-----	11	Wetness
Grano-----	2	Wetness Susceptible to rutting and wheel slippage
Redby-----	2	Wetness
1314: Tacoosh-----	90	Wetness Susceptible to rutting and wheel slippage
Rifle-----	8	Wetness Susceptible to rutting and wheel slippage
Sax-----	2	Wetness Susceptible to rutting and wheel slippage
1327B: Karlstad-----	65	No major considerations
Marquette-----	25	No major considerations
Sahkahtay-----	7	Wetness Susceptible to rutting and wheel slippage
Redby-----	3	Wetness
1328: Northwood, wooded-----	90	Wetness Susceptible to rutting and wheel slippage
Berner, wooded-----	5	Wetness Susceptible to rutting and wheel slippage
Grygla-----	5	Wetness
1333: Dora, wooded-----	90	Wetness Susceptible to rutting and wheel slippage

Table 15.--Forest Log Landing Considerations--Continued

Map symbol and component name	Percent of map unit	Forest log landing considerations
1333:		
Lupton-----	4	Wetness Susceptible to rutting and wheel slippage
Wildwood-----	4	Wetness Susceptible to rutting and wheel slippage
Auganaush-----	2	Wetness Susceptible to rutting and wheel slippage
1399B:		
Two Inlets-----	85	No major considerations
Wurtsmith-----	6	No major considerations
Zimmerman-----	6	No major considerations
Meehan-----	3	Wetness
1401:		
Grygla, depressiona-----	90	Wetness
Northwood, wooded-----	5	Wetness Susceptible to rutting and wheel slippage
Chilgren-----	3	Wetness Susceptible to rutting and wheel slippage
Grygla-----	2	Wetness
1402:		
Leafriver, wooded-----	90	Wetness Susceptible to rutting and wheel slippage
Cormant-----	4	Wetness
Tawas-----	4	Wetness Susceptible to rutting and wheel slippage
Redby-----	2	Wetness
1404:		
Berner, wooded-----	90	Wetness Susceptible to rutting and wheel slippage
Lupton-----	4	Wetness Susceptible to rutting and wheel slippage
Northwood, wooded-----	4	Wetness Susceptible to rutting and wheel slippage
Grygla-----	2	Wetness
1414:		
Nereson, very cobbly-----	85	No major considerations
Percy, very cobbly-----	10	Wetness Susceptible to rutting and wheel slippage
Pelan-----	3	No major considerations
Foxhome-----	2	No major considerations

Table 15.--Forest Log Landing Considerations--Continued

Map symbol and component name	Percent of map unit	Forest log landing considerations
1444:		
Wurtsmith-----	85	No major considerations
Meehan-----	10	Wetness
Clearriver-----	2	No major considerations
Two Inlets-----	2	No major considerations
Cormant-----	1	Wetness
1808:		
Markey, ponded-----	90	Wetness Susceptible to rutting and wheel slippage
Leafriver-----	4	Wetness Susceptible to rutting and wheel slippage
Seelyeville, ponded-----	4	Wetness Susceptible to rutting and wheel slippage
Cormant-----	2	Wetness
1923B:		
Garnes, very stony-----	85	Susceptible to rutting and wheel slippage
Chilgren-----	10	Wetness Susceptible to rutting and wheel slippage
Eckvoll-----	3	No major considerations
Pelan-----	2	No major considerations
1984:		
Leafriver-----	90	Wetness Susceptible to rutting and wheel slippage
Cormant-----	5	Wetness
Markey-----	3	Wetness Susceptible to rutting and wheel slippage
Redby-----	2	Wetness

Table 16.--Forest Land Site Preparation and Planting Considerations

(Only the soils that support vegetation suitable for forest land management are listed. See text for a description of the considerations listed in this table.)

Map symbol and component name	Percent of map unit	Forest land site preparation and planting considerations
48B:		
Hiwood-----	85	No major considerations
Redby-----	7	Wetness
Clearriver-----	3	No major considerations
Cormant-----	3	Wetness
Zimmerman-----	2	No major considerations
64:		
Ulen-----	85	No major considerations
Rosewood-----	10	Wetness
Redby-----	3	Wetness
Rushlake-----	2	No major considerations
77:		
Garnes-----	85	No major considerations
Chilgren-----	10	Wetness
Eckvoll-----	3	No major considerations
Pelan-----	2	No major considerations
111:		
Hangaard-----	90	Wetness
Deerwood-----	5	Wetness
Rushlake-----	3	No major considerations
Rosewood-----	2	Wetness
116:		
Redby-----	85	Wetness
Cormant-----	8	Wetness
Hiwood-----	6	No major considerations
Leafriver-----	1	Wetness
117:		
Cormant-----	85	Wetness
Leafriver-----	7	Wetness
Epoufette-----	3	Wetness
Redby-----	3	Wetness
Grygla, depressional-----	2	Wetness

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land site preparation and planting considerations
133:		
Dalbo-----	85	No major considerations
Mustinka-----	10	Wetness Potential poor tilth and compaction
Moranville-----	5	No major considerations
145:		
Enstrom-----	85	No major considerations
Grygla-----	10	Wetness
Redby-----	4	Wetness
Pelan-----	1	No major considerations
147:		
Spooner-----	85	Wetness
Baudette-----	5	No major considerations
Grygla-----	5	Wetness
Sago-----	5	Wetness
158B:		
Zimmerman-----	85	No major considerations
Hiwood-----	6	No major considerations
Two Inlets-----	6	No major considerations
Redby-----	3	Wetness
167B:		
Baudette-----	85	No major considerations
Spooner-----	10	Wetness
Moranville-----	5	No major considerations
191:		
Epoufette-----	85	Wetness
Cormant-----	5	Wetness
Leafriver-----	5	Wetness
Meehan-----	5	Wetness
202:		
Meehan-----	85	Wetness
Cormant-----	8	Wetness
Wurtsmith-----	5	No major considerations
Leafriver-----	2	Wetness
205:		
Karlstad-----	85	No major considerations
Sahkahtay-----	7	Wetness

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land site preparation and planting considerations
205:		
Marquette-----	5	Water erosion
Redby-----	2	Wetness
Pits, gravel-----	1	Not rated
242B:		
Marquette-----	85	Water erosion
Karlstad-----	14	No major considerations
Pits, gravel-----	1	Not rated
280:		
Pelan-----	85	No major considerations
Strandquist-----	10	Wetness Potential poor tilth and compaction
Garnes-----	3	No major considerations
Marquette-----	1	Water erosion
Pits, gravel-----	1	Not rated
404:		
Chilgren-----	85	Wetness
Garnes-----	5	No major considerations
Grygla-----	5	Wetness
Haug-----	5	Wetness
481:		
Kratka-----	85	Wetness
Northwood-----	5	Wetness
Percy-----	5	Wetness Potential poor tilth and compaction
Enstrom-----	3	No major considerations
Strandquist-----	2	Wetness Potential poor tilth and compaction
482:		
Grygla-----	85	Wetness
Chilgren-----	5	Wetness
Grygla, depressional-----	5	Wetness
Enstrom-----	3	No major considerations
Northwood-----	2	Wetness
534:		
Mooselake-----	90	Wetness
Bullwinkle-----	4	Wetness

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land site preparation and planting considerations
534:		
Dora-----	3	Wetness
Tawas-----	3	Wetness
541:		
Rifle-----	90	Wetness
Tacoosh-----	10	Wetness
543:		
Markey-----	90	Wetness
Cormant-----	5	Wetness
Seelyeville-----	5	Wetness
544:		
Cathro-----	90	Wetness
Percy, very cobbly-----	4	Wetness Cobbly surface Potential poor tilth and compaction
Grygla-----	3	Wetness
Seelyeville-----	3	Wetness
546:		
Lupton-----	90	Wetness
Bullwinkle-----	4	Wetness
Dora-----	3	Wetness
Tawas-----	3	Wetness
561:		
Bullwinkle-----	90	Wetness
Lupton-----	4	Wetness
Northwood, wooded-----	4	Wetness
Chilgren-----	2	Wetness
563:		
Northwood-----	90	Wetness
Grygla-----	4	Wetness
Berner-----	3	Wetness
Strandquist-----	3	Wetness Potential poor tilth and compaction
565:		
Eckvoll-----	85	No major considerations
Chilgren-----	5	Wetness
Grygla-----	5	Wetness
Hiwood-----	5	No major considerations

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land site preparation and planting considerations
569:		
Wabanica-----	85	Wetness Potential poor tilth and compaction
Warroad-----	6	Wetness
Sax-----	4	Wetness
Grano-----	3	Wetness
Enstrom-----	2	No major considerations
570:		
Faunce-----	85	No major considerations
Clearriver-----	7	No major considerations
Zimmerman-----	4	No major considerations
Meehan-----	3	Wetness
Pits, gravel-----	1	Not rated
583:		
Nereson-----	85	No major considerations
Percy-----	10	Wetness Potential poor tilth and compaction
Pelan-----	3	No major considerations
Foxhome-----	2	No major considerations
627:		
Tawas-----	90	Wetness
Leafriver-----	4	Wetness
Lupton-----	4	Wetness
Cormant-----	2	Wetness
630:		
Wildwood-----	90	Wetness
Boash-----	4	Wetness Potential poor tilth and compaction
Dora-----	4	Wetness
Espelie-----	2	Wetness
643:		
Huot-----	85	No major considerations
Thiefriver-----	12	Wetness
Redby-----	3	Wetness
645:		
Espelie-----	85	Wetness
Grano-----	5	Wetness

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land site preparation and planting considerations
645:		
Hilaire-----	5	No major considerations
Wildwood-----	5	Wetness
651:		
Thief river-----	85	Wetness
Grano-----	5	Wetness
Huot-----	5	No major considerations
Wildwood-----	5	Wetness
708:		
Rushlake-----	85	No major considerations
Corliss-----	6	No major considerations
Redby-----	5	Wetness
Hangaard-----	3	Wetness
Pits, gravel-----	1	Not rated
721B:		
Corliss-----	85	No major considerations
Rushlake-----	10	No major considerations
Hangaard-----	4	Wetness
Pits, gravel-----	1	Not rated
733:		
Berner-----	90	Wetness
Grygla-----	5	Wetness
Seelyeville-----	5	Wetness
737:		
Mahkonce-----	85	Potential poor tilth and compaction
Auganaush-----	10	Wetness Potential poor tilth and compaction
Eckvoll-----	5	No major considerations
755:		
Woods lake-----	85	Wetness Potential poor tilth and compaction
Boash-----	8	Wetness Potential poor tilth and compaction
Wildwood-----	5	Wetness
Dora-----	2	Wetness

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land site preparation and planting considerations
767:		
Auganaush-----	90	Wetness Potential poor tilth and compaction
Mustinka-----	5	Wetness Potential poor tilth and compaction
Wildwood-----	3	Wetness
Mahkonce-----	2	Potential poor tilth and compaction
794:		
Clearriver-----	85	No major considerations
Hiwood-----	7	No major considerations
Meehan-----	5	Wetness
Faunce-----	3	No major considerations
1002:		
Fluvaquents, frequently flooded-----	90	Flooding Wetness
Seelyeville-----	6	Wetness
Hapludalfs-----	2	Slope Water erosion
Water-----	2	Not rated
1030:		
Pits, gravel-----	75	Not rated
Udipsamments-----	20	Slope Water erosion
Corliss-----	2	No major considerations
Karlstad-----	2	No major considerations
Hangaard-----	1	Wetness
1067:		
Fluvaquents, frequently flooded-----	60	Flooding Wetness
Hapludalfs-----	30	Slope Water erosion
Seelyeville-----	5	Wetness
Water-----	5	Not rated
1133B:		
Skime-----	85	No major considerations
Hiwood-----	10	No major considerations
Zippel-----	5	Wetness

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land site preparation and planting considerations
1179B:		
Moranville-----	85	No major considerations
Baudette-----	5	No major considerations
Hiwood-----	5	No major considerations
Spooner-----	5	Wetness
1181:		
Rosewood-----	50	Wetness
Ulen-----	40	No major considerations
Redby-----	5	Wetness
Deerwood-----	3	Wetness
Syrene-----	2	Wetness
1182:		
Warroad-----	85	Wetness
Wabanica-----	7	Wetness Potential poor tilth and compaction
Enstrom-----	5	No major considerations
Sax-----	3	Wetness
1187:		
Dora, ponded-----	90	Wetness
Seelyeville, ponded-----	4	Wetness
Wildwood-----	4	Wetness
Boash-----	2	Wetness Potential poor tilth and compaction
1191:		
Sahkahtay-----	85	Wetness
Cormant-----	5	Wetness
Deerwood-----	5	Wetness
Karlstad-----	3	No major considerations
Redby-----	2	Wetness
1206:		
Cormant-----	55	Wetness
Redby-----	35	Wetness
Hiwood-----	5	No major considerations
Leafriver-----	5	Wetness

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land site preparation and planting considerations
1214:		
Mustinka-----	90	Wetness Potential poor tilth and compaction
Espelie-----	4	Wetness
Wildwood-----	4	Wetness
Dalbo-----	2	No major considerations
1274B:		
Redby-----	40	Wetness
Hiwood-----	30	No major considerations
Leafriver, wooded-----	15	Wetness
Clearriver-----	5	No major considerations
Cormant-----	5	Wetness
Zimmerman-----	5	No major considerations
1305:		
Hilaire-----	85	No major considerations
Espelie-----	11	Wetness
Grano-----	2	Wetness
Redby-----	2	Wetness
1314:		
Tacoosh-----	90	Wetness
Rifle-----	8	Wetness
Sax-----	2	Wetness
1327B:		
Karlstad-----	65	No major considerations
Marquette-----	25	Water erosion
Sahkahtay-----	7	Wetness
Redby-----	3	Wetness
1328:		
Northwood, wooded-----	90	Wetness
Berner, wooded-----	5	Wetness
Grygla-----	5	Wetness
1333:		
Dora, wooded-----	90	Wetness
Lupton-----	4	Wetness
Wildwood-----	4	Wetness
Auganaush-----	2	Wetness Potential poor tilth and compaction

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land site preparation and planting considerations
1399B:		
Two Inlets-----	85	No major considerations
Wurtsmith-----	6	No major considerations
Zimmerman-----	6	No major considerations
Meehan-----	3	Wetness
1401:		
Grygla, depressional-----	90	Wetness
Northwood, wooded-----	5	Wetness
Chilgren-----	3	Wetness
Grygla-----	2	Wetness
1402:		
Leafriver, wooded-----	90	Wetness
Cormant-----	4	Wetness
Tawas-----	4	Wetness
Redby-----	2	Wetness
1404:		
Berner, wooded-----	90	Wetness
Lupton-----	4	Wetness
Northwood, wooded-----	4	Wetness
Grygla-----	2	Wetness
1414:		
Nereson, very cobbly-----	85	Cobbly surface
Percy, very cobbly-----	10	Wetness Cobbly surface Potential poor tilth and compaction
Pelan-----	3	No major considerations
Foxhome-----	2	No major considerations
1444:		
Wurtsmith-----	85	No major considerations
Meehan-----	10	Wetness
Clearriver-----	2	No major considerations
Two Inlets-----	2	No major considerations
Cormant-----	1	Wetness
1808:		
Markey, ponded-----	90	Wetness
Leafriver-----	4	Wetness

Table 16.--Forest Land Site Preparation and Planting Considerations--Continued

Map symbol and component name	Percent of map unit	Forest land site preparation and planting considerations
1808:		
Seelyeville, ponded-----	4	Wetness
Cormant-----	2	Wetness
1923B:		
Garnes, very stony-----	85	Surface stones Cobbly surface
Chilgren-----	10	Wetness
Eckvoll-----	3	No major considerations
Pelan-----	2	No major considerations
1984:		
Leafriver-----	90	Wetness
Cormant-----	5	Wetness
Markey-----	3	Wetness
Redby-----	2	Wetness

Table 17.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
47:						
Colvin-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Bearden-----	5	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Moderate: wetness	Moderate: wetness	Moderate: wetness
Grano-----	5	Severe: too clayey wetness	Severe: too clayey wetness	Severe: too clayey wetness	Severe: too clayey wetness	Severe: too clayey wetness
Sax-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
48B:						
Hiwood-----	85	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty
Redby-----	7	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: wetness droughty
Clearriver-----	3	Moderate: too sandy	Moderate: too sandy	Moderate: small stones too sandy	Moderate: too sandy	Severe: droughty
Cormant-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Zimmerman-----	2	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty
52:						
Augsburg-----	85	Severe: percs slowly wetness	Severe: percs slowly wetness	Severe: percs slowly wetness	Severe: wetness	Severe: wetness
Croke-----	5	Slight	Slight	Slight	Slight	Slight
Grano-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Sago-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
59:						
Grimstad-----	85	Moderate: wetness	Moderate: wetness	Moderate: wetness	Moderate: wetness	Moderate: wetness
Strathcona-----	12	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Foxhome-----	3	Slight	Slight	Slight	Slight	Slight

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
64:						
Ulen-----	85	Slight	Slight	Slight	Slight	Moderate: droughty
Rosewood-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Redby-----	3	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: wetness droughty
Rushlake-----	2	Moderate: too sandy	Moderate: too sandy	Moderate: small stones too sandy	Moderate: too sandy	Severe: droughty
65:						
Foxhome-----	85	Slight	Slight	Slight	Slight	Slight
Strandquist-----	12	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Skagen-----	3	Slight	Slight	Moderate: small stones	Slight	Slight
67:						
Bearden-----	85	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Moderate: wetness	Moderate: wetness	Moderate: wetness
Colvin-----	15	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
77:						
Garnes-----	85	Slight	Slight	Moderate: small stones	Slight	Slight
Chilgren-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Eckvoll-----	3	Moderate: too sandy	Moderate: too sandy	Moderate: small stones	Moderate: too sandy	Slight
Pelan-----	2	Slight	Slight	Moderate: small stones	Slight	Moderate: droughty
111:						
Hangaard-----	90	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness droughty
Deerwood-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Rushlake-----	3	Moderate: too sandy	Moderate: too sandy	Moderate: small stones too sandy	Moderate: too sandy	Severe: droughty
Rosewood-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
116:						
Redby-----	85	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: wetness droughty
Cormant-----	8	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Hiwood-----	6	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty
Leafriver-----	1	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
117:						
Cormant-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Leafriver-----	7	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Epoufette-----	3	Severe: wetness	Severe: wetness	Severe: small stones wetness	Severe: wetness	Severe: wetness droughty
Redby-----	3	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: wetness droughty
Grygla, depressional---	2	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
133:						
Dalbo-----	85	Slight	Slight	Slight	Slight	Slight
Mustinka-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Moranville-----	5	Moderate: percs slowly	Moderate: percs slowly	Moderate: percs slowly slope	Slight	Moderate: droughty
145:						
Enstrom-----	85	Moderate: percs slowly	Moderate: percs slowly	Moderate: percs slowly	Slight	Moderate: droughty
Grygla-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Redby-----	4	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: wetness droughty
Pelan-----	1	Slight	Slight	Moderate: small stones	Slight	Moderate: droughty
147:						
Spooner-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Baudette-----	5	Slight	Slight	Moderate: slope	Slight	Slight

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
147:						
Grygla-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Sago-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
158B:						
Zimmerman-----	85	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty
Hiwood-----	6	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty
Two Inlets-----	6	Moderate: small stones too sandy	Moderate: small stones too sandy	Severe: small stones	Moderate: too sandy	Moderate: small stones droughty
Redby-----	3	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: wetness droughty
167B:						
Baudette-----	85	Slight	Slight	Moderate: slope	Slight	Slight
Spooner-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Moranville-----	5	Moderate: percs slowly	Moderate: percs slowly	Moderate: percs slowly slope	Slight	Moderate: droughty
187:						
Haug-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Cathro-----	3	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Boash-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
191:						
Epoufette-----	85	Severe: wetness	Severe: wetness	Severe: small stones wetness	Severe: wetness	Severe: wetness droughty
Cormant-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Leafriver-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Meehan-----	5	Severe: wetness too acid	Severe: too acid	Severe: wetness too acid	Moderate: too sandy wetness	Severe: too acid

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
202:						
Meehan-----	85	Severe: wetness too acid	Severe: too acid	Severe: wetness too acid	Moderate: too sandy wetness	Severe: too acid
Cormant-----	8	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Wurtsmith-----	5	Moderate: too sandy	Moderate: too sandy	Moderate: small stones too sandy	Moderate: too sandy	Moderate: droughty
Leafriver-----	2	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
205:						
Karlstad-----	85	Slight	Slight	Slight	Slight	Moderate: droughty
Sahkahtay-----	7	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Marquette-----	5	Slight	Slight	Moderate: slope small stones	Slight	Severe: droughty
Redby-----	2	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: wetness droughty
Pits, gravel-----	1	---	---	---	---	---
242B:						
Marquette-----	85	Slight	Slight	Moderate: slope small stones	Slight	Severe: droughty
Karlstad-----	14	Slight	Slight	Slight	Slight	Moderate: droughty
Pits, gravel-----	1	---	---	---	---	---
280:						
Pelan-----	85	Slight	Slight	Moderate: small stones	Slight	Moderate: droughty
Strandquist-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Garnes-----	3	Slight	Slight	Moderate: small stones	Slight	Slight
Marquette-----	1	Slight	Slight	Moderate: slope small stones	Slight	Severe: droughty
Pits, gravel-----	1	---	---	---	---	---

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
379:						
Percy, very cobbly-----	90	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Boash-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Strandquist-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Haug-----	2	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Skagen, very cobbly----	2	Slight	Slight	Moderate: small stones	Slight	Slight
383:						
Percy-----	90	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Boash-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Strandquist-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Haug-----	2	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Skagen-----	2	Slight	Slight	Moderate: small stones	Slight	Slight
384:						
Percy, depressional----	85	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
Haug-----	7	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Boash-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
387:						
Roliss, depressional---	85	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
Haug-----	10	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Roliss-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
404:						
Chilgren-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Garnes-----	5	Slight	Slight	Moderate: small stones	Slight	Slight
Grygla-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Haug-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
412:						
Mavie-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Foxhome-----	5	Slight	Slight	Slight	Slight	Slight
Northwood-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Percy, very cobbly----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
432:						
Strandquist-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Percy, very cobbly----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Haug-----	4	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Boash-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Foxhome-----	3	Slight	Slight	Slight	Slight	Slight
433:						
Syrene, depressional---	85	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
Deerwood-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Rosewood-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Syrene-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
435:						
Syrene-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Rosewood-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
435:						
Syrene, depressional---	5	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
Karlsruhe-----	3	Moderate: wetness	Moderate: wetness	Moderate: small stones wetness	Moderate: wetness	Moderate: wetness droughty
Deerwood-----	2	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
439:						
Strathcona-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Northwood-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Grimstad-----	3	Moderate: wetness	Moderate: wetness	Moderate: wetness	Moderate: wetness	Moderate: wetness
Strandquist-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
481:						
Kratka-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Northwood-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Enstrom-----	3	Moderate: percs slowly	Moderate: percs slowly	Moderate: percs slowly	Slight	Moderate: droughty
Strandquist-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
482:						
Grygla-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Chilgren-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Grygla, depressional---	5	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
Enstrom-----	3	Moderate: percs slowly	Moderate: percs slowly	Moderate: percs slowly	Slight	Moderate: droughty
Northwood-----	2	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
532:						
Sago-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Cathro-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Zippel-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
534:						
Mooselake-----	90	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness
Bullwinkle-----	4	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness
Dora-----	3	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Tawas-----	3	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness
540:						
Seelyeville-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Cathro-----	4	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Dora-----	3	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Markey-----	3	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
541:						
Rifle-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Tacoosh-----	10	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
543:						
Markey-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Cormant-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
543: Seelyeville-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
544: Cathro-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Percy, very cobbly----	4	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Grygla-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Seelyeville-----	3	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
546: Lupton-----	90	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness
Bullwinkle-----	4	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness
Dora-----	3	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Tawas-----	3	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness
547: Deerwood-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Markey-----	4	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Rosewood-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Syrene-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
550: Dora-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Boash-----	4	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Seelyeville-----	3	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
550: Woodslake-----	3	Severe: percs slowly too clayey ponding	Severe: percs slowly too clayey ponding	Severe: percs slowly too clayey ponding	Severe: too clayey ponding	Severe: too clayey ponding
561: Bullwinkle-----	90	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness
Lupton-----	4	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness
Northwood, wooded-----	4	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Chilgren-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
563: Northwood-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Grygla-----	4	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Berner-----	3	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Strandquist-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
565: Eckvoll-----	85	Moderate: too sandy	Moderate: too sandy	Moderate: small stones	Moderate: too sandy	Slight
Chilgren-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Grygla-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Hiwood-----	5	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty
568: Zippel-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Augsburg, depressional-	5	Severe: percs slowly ponding	Severe: percs slowly ponding	Severe: percs slowly ponding	Severe: ponding	Severe: ponding
Sago-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Skime-----	5	Slight	Slight	Moderate: slope	Slight	Moderate: droughty

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
569:						
Wabanica-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Warroad-----	6	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Sax-----	4	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Grano-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Enstrom-----	2	Moderate: percs slowly	Moderate: percs slowly	Moderate: percs slowly	Slight	Moderate: droughty
570:						
Faunce-----	85	Slight	Slight	Moderate: small stones	Slight	Severe: droughty
Clearriver-----	7	Moderate: too sandy	Moderate: too sandy	Moderate: small stones too sandy	Moderate: too sandy	Severe: droughty
Zimmerman-----	4	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty
Meehan-----	3	Severe: wetness too acid	Severe: too acid	Severe: wetness too acid	Moderate: too sandy wetness	Severe: too acid
Pits, gravel-----	1	---	---	---	---	---
581:						
Percy-----	90	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Haug-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Boash-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Skagen-----	2	Slight	Slight	Moderate: small stones	Slight	Slight
582:						
Roliss-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Roliss, depressiona---	7	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
Boash-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Haug-----	3	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
583:						
Nereson-----	85	Slight	Slight	Moderate: small stones	Slight	Slight
Percy-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Pelan-----	3	Slight	Slight	Moderate: small stones	Slight	Moderate: droughty
Foxhome-----	2	Slight	Slight	Slight	Slight	Slight
627:						
Tawas-----	90	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness
Leafriver-----	4	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Lupton-----	4	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness
Cormant-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
630:						
Wildwood-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Boash-----	4	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Dora-----	4	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Espelie-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
643:						
Huot-----	85	Slight	Slight	Moderate: small stones	Slight	Moderate: droughty
Thiefriver-----	12	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Redby-----	3	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: wetness droughty
644:						
Boash-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Percy-----	7	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
644:						
Woodslake-----	5	Severe: percs slowly too clayey ponding	Severe: percs slowly too clayey ponding	Severe: percs slowly too clayey ponding	Severe: too clayey ponding	Severe: too clayey ponding
Strandquist-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
645:						
Espelie-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Grano-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Hilaire-----	5	Slight	Slight	Moderate: small stones	Slight	Moderate: droughty
Wildwood-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
651:						
Thiefriever-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Grano-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Huot-----	5	Slight	Slight	Moderate: small stones	Slight	Moderate: droughty
Wildwood-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
708:						
Rushlake-----	85	Moderate: too sandy	Moderate: too sandy	Moderate: small stones too sandy	Moderate: too sandy	Severe: droughty
Corliss-----	6	Moderate: too sandy	Moderate: too sandy	Moderate: slope small stones	Moderate: too sandy	Severe: droughty
Redby-----	5	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: wetness droughty
Hangaard-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness droughty
Pits, gravel-----	1	---	---	---	---	---
712:						
Rosewood-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Deerwood-----	6	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
712: Hangaard-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness droughty
Ulen-----	4	Slight	Slight	Slight	Slight	Moderate: droughty
721B: Corliss-----	85	Moderate: too sandy	Moderate: too sandy	Moderate: slope small stones	Moderate: too sandy	Severe: droughty
Rushlake-----	10	Moderate: too sandy	Moderate: too sandy	Moderate: small stones too sandy	Moderate: too sandy	Severe: droughty
Hangaard-----	4	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness droughty
Pits, gravel-----	1	---	---	---	---	---
733: Berner-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Grygla-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Seelyeville-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
737: Mahkonce-----	85	Slight	Slight	Slight	Slight	Slight
Auganaush-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Eckvoll-----	5	Moderate: too sandy	Moderate: too sandy	Moderate: small stones	Moderate: too sandy	Slight
755: Woodslake-----	85	Severe: percs slowly too clayey ponding	Severe: percs slowly too clayey ponding	Severe: percs slowly too clayey ponding	Severe: too clayey ponding	Severe: too clayey ponding
Boash-----	8	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Wildwood-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Dora-----	2	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
767:						
Auganaush-----	90	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Mustinka-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Wildwood-----	3	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Mahkonce-----	2	Slight	Slight	Slight	Slight	Slight
794:						
Clearriver-----	85	Moderate: too sandy	Moderate: too sandy	Moderate: small stones too sandy	Moderate: too sandy	Severe: droughty
Hiwood-----	7	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty
Meehan-----	5	Severe: wetness too acid	Severe: too acid	Severe: wetness too acid	Moderate: too sandy wetness	Severe: too acid
Faunce-----	3	Slight	Slight	Moderate: small stones	Slight	Severe: droughty
1002:						
Fluvaquents, frequently flooded-----	90	Severe: flooding ponding	Severe: ponding	Severe: flooding ponding	Severe: ponding	Severe: flooding ponding
Seelyeville-----	6	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Hapludalfs-----	2	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Water-----	2	---	---	---	---	---
1030:						
Pits, gravel-----	75	---	---	---	---	---
Udipsamments-----	20	Severe: slope too sandy	Severe: slope too sandy	Severe: slope too sandy	Severe: slope too sandy	Severe: slope
Corliss-----	2	Moderate: too sandy	Moderate: too sandy	Moderate: slope small stones	Moderate: too sandy	Severe: droughty
Karlstad-----	2	Slight	Slight	Slight	Slight	Moderate: droughty
Hangaard-----	1	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness droughty

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1031: Seelyeville, ponded----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Cathro-----	4	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Dora-----	3	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Markey-----	3	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
1067: Fluvaquents, frequently flooded-----	60	Severe: flooding ponding	Severe: ponding	Severe: flooding ponding	Severe: ponding	Severe: flooding ponding
Hapludalfs-----	30	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Seelyeville-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Water-----	5	---	---	---	---	---
1133B: Skime-----	85	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
Hiwood-----	10	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty
Zippel-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
1134: Borup-----	55	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Glyndon-----	35	Slight	Slight	Slight	Slight	Slight
Augsburg, depressiona-	5	Severe: percs slowly ponding	Severe: percs slowly ponding	Severe: percs slowly ponding	Severe: ponding	Severe: ponding
Skime-----	5	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
1144: Strathcona, depressiona-----	45	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
Kratka, depressiona---	45	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1144:						
Kratka-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Northwood-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
1154:						
Sax-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Wabanica-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Cathro-----	3	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Woodslake-----	2	Severe: percs slowly too clayey ponding	Severe: percs slowly too clayey ponding	Severe: percs slowly too clayey ponding	Severe: too clayey ponding	Severe: too clayey ponding
1158:						
Skagen-----	85	Slight	Slight	Moderate: small stones	Slight	Slight
Percy-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Foxhome-----	5	Slight	Slight	Slight	Slight	Slight
1170:						
Skagen, very cobbly----	85	Slight	Slight	Moderate: small stones	Slight	Slight
Percy, very cobbly----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Foxhome-----	5	Slight	Slight	Slight	Slight	Slight
1179B:						
Moranville-----	85	Moderate: percs slowly	Moderate: percs slowly	Moderate: percs slowly slope	Slight	Moderate: droughty
Baudette-----	5	Slight	Slight	Moderate: slope	Slight	Slight
Hiwood-----	5	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty
Spooner-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
1181:						
Rosewood-----	50	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Ulen-----	40	Slight	Slight	Slight	Slight	Moderate: droughty

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1181: Redby-----	5	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: wetness droughty
Deerwood-----	3	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Syrene-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
1182: Warroad-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Wabanica-----	7	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Enstrom-----	5	Moderate: percs slowly	Moderate: percs slowly	Moderate: percs slowly	Slight	Moderate: droughty
Sax-----	3	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
1187: Dora, ponded-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Seelyeville, ponded----	4	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Wildwood-----	4	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Boash-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
1191: Sahkahtay-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Cormant-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Deerwood-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Karlstad-----	3	Slight	Slight	Slight	Slight	Moderate: droughty
Redby-----	2	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: wetness droughty

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1206:						
Cormant-----	55	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Redby-----	35	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: wetness droughty
Hiwood-----	5	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty
Leafriver-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
1214:						
Mustinka-----	90	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Espelie-----	4	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Wildwood-----	4	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Dalbo-----	2	Slight	Slight	Slight	Slight	Slight
1274B:						
Redby-----	40	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: wetness droughty
Hiwood-----	30	Moderate: too sandy	Moderate: too sandy	Moderate: slope too sandy	Moderate: too sandy	Moderate: droughty
Leafriver, wooded-----	15	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Clearriver-----	5	Moderate: too sandy	Moderate: too sandy	Moderate: small stones too sandy	Moderate: too sandy	Severe: droughty
Cormant-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Zimmerman-----	5	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty
1298:						
Borup-----	90	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Augsburg, depressional-	3	Severe: percs slowly ponding	Severe: percs slowly ponding	Severe: percs slowly ponding	Severe: ponding	Severe: ponding
Glyndon-----	3	Slight	Slight	Slight	Slight	Slight
Sago-----	2	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1298: Skime-----	2	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
1302: Foldahl-----	85	Slight	Slight	Slight	Slight	Slight
Kratka-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Foxhome-----	5	Slight	Slight	Slight	Slight	Slight
1304: Glyndon-----	85	Slight	Slight	Slight	Slight	Slight
Borup-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Skime-----	5	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
1305: Hilaire-----	85	Slight	Slight	Moderate: small stones	Slight	Moderate: droughty
Espelie-----	11	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Grano-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Redby-----	2	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: wetness droughty
1314: Tacoosh-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Rifle-----	8	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Sax-----	2	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
1316: Wheatville-----	85	Moderate: percs slowly	Moderate: percs slowly	Moderate: percs slowly	Slight	Slight
Augsburg-----	13	Severe: percs slowly wetness	Severe: percs slowly wetness	Severe: percs slowly wetness	Severe: wetness	Severe: wetness
Grano-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
1326: Augsburg, depressional-	45	Severe: percs slowly ponding	Severe: percs slowly ponding	Severe: percs slowly ponding	Severe: ponding	Severe: ponding

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1326: Wabanica, depressional-	45	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
Sax-----	6	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Espelie-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Zippel-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
1327B: Karlstad-----	65	Slight	Slight	Slight	Slight	Moderate: droughty
Marquette-----	25	Slight	Slight	Moderate: slope small stones	Slight	Severe: droughty
Sahkahtay-----	7	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Redby-----	3	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: wetness droughty
1328: Northwood, wooded-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Berner, wooded-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Grygla-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
1333: Dora, wooded-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Lupton-----	4	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness
Wildwood-----	4	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Auganaush-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
1356: Water, miscellaneous.						

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1399B:						
Two Inlets-----	85	Moderate: small stones too sandy	Moderate: small stones too sandy	Severe: small stones	Moderate: too sandy	Moderate: small stones droughty
Wurtsmith-----	6	Moderate: too sandy	Moderate: too sandy	Moderate: small stones too sandy	Moderate: too sandy	Moderate: droughty
Zimmerman-----	6	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty
Meehan-----	3	Severe: wetness too acid	Severe: too acid	Severe: wetness too acid	Moderate: too sandy wetness	Severe: too acid
1401:						
Grygla, depressional---	90	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
Northwood, wooded-----	5	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Chilgren-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Grygla-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
1402:						
Leafriver, wooded-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Cormant-----	4	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Tawas-----	4	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness
Redby-----	2	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: wetness droughty
1404:						
Berner, wooded-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Lupton-----	4	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness
Northwood, wooded-----	4	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Grygla-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1405:						
Lallie-----	90	Severe: excess salt ponding	Severe: excess salt ponding	Severe: excess salt ponding	Severe: ponding	Severe: excess salt ponding
Sax-----	7	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Wabanica-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
1414:						
Nereson, very cobbly---	85	Slight	Slight	Moderate: small stones	Slight	Slight
Percy, very cobbly----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Pelan-----	3	Slight	Slight	Moderate: small stones	Slight	Moderate: droughty
Foxhome-----	2	Slight	Slight	Slight	Slight	Slight
1428:						
Karlsruhe-----	85	Moderate: wetness	Moderate: wetness	Moderate: small stones wetness	Moderate: wetness	Moderate: wetness droughty
Syrene-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Ulen-----	5	Slight	Slight	Slight	Slight	Moderate: droughty
1444:						
Wurtsmith-----	85	Moderate: too sandy	Moderate: too sandy	Moderate: small stones too sandy	Moderate: too sandy	Moderate: droughty
Meehan-----	10	Severe: wetness too acid	Severe: too acid	Severe: wetness too acid	Moderate: too sandy wetness	Severe: too acid
Clearriver-----	2	Moderate: too sandy	Moderate: too sandy	Moderate: small stones too sandy	Moderate: too sandy	Severe: droughty
Two Inlets-----	2	Moderate: small stones too sandy	Moderate: small stones too sandy	Severe: small stones	Moderate: too sandy	Moderate: small stones droughty
Cormant-----	1	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
1448:						
Grano-----	90	Severe: too clayey wetness	Severe: too clayey wetness	Severe: too clayey wetness	Severe: too clayey wetness	Severe: too clayey wetness
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1448:						
Augsburg-----	3	Severe: percs slowly wetness	Severe: percs slowly wetness	Severe: percs slowly wetness	Severe: wetness	Severe: wetness
Woodslake-----	2	Severe: percs slowly too clayey ponding	Severe: percs slowly too clayey ponding	Severe: percs slowly too clayey ponding	Severe: too clayey ponding	Severe: too clayey ponding
1449:						
Grano-----	90	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Augsburg-----	3	Severe: percs slowly wetness	Severe: percs slowly wetness	Severe: percs slowly wetness	Severe: wetness	Severe: wetness
Woodslake-----	2	Severe: percs slowly too clayey ponding	Severe: percs slowly too clayey ponding	Severe: percs slowly too clayey ponding	Severe: too clayey ponding	Severe: too clayey ponding
1807:						
Cathro, ponded-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Haug-----	4	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Seelyeville, ponded----	4	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Percy-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
1808:						
Markey, ponded-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Leafriver-----	4	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Seelyeville, ponded----	4	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Cormant-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
1918:						
Croke-----	85	Slight	Slight	Slight	Slight	Slight

Table 17.--Recreational Development--Continued

Map symbol and component name	Percent of map unit	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1918:						
Augsburg-----	13	Severe: percs slowly wetness	Severe: percs slowly wetness	Severe: percs slowly wetness	Severe: wetness	Severe: wetness
Grano-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
1923B:						
Garnes, very stony----	85	Slight	Slight	Moderate: small stones	Slight	Slight
Chilgren-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Eckvoll-----	3	Moderate: too sandy	Moderate: too sandy	Moderate: small stones	Moderate: too sandy	Slight
Pelan-----	2	Slight	Slight	Moderate: small stones	Slight	Moderate: droughty
1984:						
Leafriver-----	90	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Cormant-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Markey-----	3	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Redby-----	2	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: too sandy wetness	Moderate: wetness droughty
W: Water.						

Table 18.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
47:												
Colvin-----	85	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Good
Bearden-----	5	Good	Good	Good	Good	Good	Fair	Fair	Fair	Good	Good	Fair
Grano-----	5	Poor	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair
Sax-----	5	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
48B:												
Hiwood-----	85	Poor	Fair	Poor	Poor	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Redby-----	7	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
Clearriver-----	3	Poor	Good	Good	Good	Good	Fair	Fair	Very poor	Good	Good	Fair
Cormant-----	3	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Zimmerman-----	2	Poor	Fair	Poor	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
52:												
Augsburg-----	85	Good	Good	Fair	Fair	Poor	Fair	Fair	Fair	Good	Fair	Fair
Croke-----	5	Good	Good	Good	Good	Fair	Fair	Poor	Fair	Good	Fair	Poor
Grano-----	5	Fair	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair
Sago-----	5	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
59:												
Grimstad-----	85	Good	Good	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair
Strathcona-----	12	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Foxhome-----	3	Good	Good	Good	Fair	Fair	Fair	Poor	Poor	Good	Fair	Poor

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
64:												
Ulen-----	85	Good	Good	Good	Fair	Poor	Fair	Poor	Poor	Fair	Fair	Poor
Rosewood-----	10	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Redby-----	3	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
Rushlake-----	2	Poor	Good	Fair	Fair	Good	Fair	Fair	Poor	Good	Good	Fair
65:												
Foxhome-----	85	Good	Good	Good	Fair	Fair	Fair	Poor	Poor	Good	Fair	Poor
Strandquist-----	12	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Good	Fair	Good
Skagen-----	3	Good	Good	Good	Good	Fair	Good	Poor	Poor	Good	Good	Poor
67:												
Bearden-----	85	Good	Good	Good	Good	Good	Fair	Fair	Fair	Good	Good	Fair
Colvin-----	15	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Good
77:												
Garnes-----	85	Good	Good	Good	Good	Fair	Good	Poor	Poor	Good	Good	Poor
Chilgren-----	10	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Good	Good	Fair
Eckvoll-----	3	Fair	Fair	Good	Good	Good	Fair	Poor	Poor	Fair	Good	Poor
Pelan-----	2	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
111:												
Hangaard-----	90	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair	Good
Deerwood-----	5	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Rushlake-----	3	Poor	Good	Fair	Fair	Good	Fair	Fair	Poor	Good	Good	Fair
Rosewood-----	2	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
116:												
Redby-----	85	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
Cormant-----	8	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
116:												
Hiwood-----	6	Poor	Fair	Poor	Poor	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Leafriver-----	1	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
117:												
Cormant-----	85	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Leafriver-----	7	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Epoufette-----	3	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Good	Fair	Poor	Fair
Redby-----	3	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
Grygla, depressional----	2	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
133:												
Dalbo-----	85	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
Mustinka-----	10	Poor	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
Moranville-----	5	Fair	Good	Good	Good	Good	Fair	Poor	Poor	Fair	Good	Poor
145:												
Enstrom-----	85	Fair	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Good	Poor
Grygla-----	10	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Redby-----	4	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
Pelan-----	1	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
147:												
Spooner-----	85	Good	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair
Baudette-----	5	Good	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Grygla-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Sago-----	5	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
158B:												
Zimmerman-----	85	Poor	Fair	Poor	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
Hiwood-----	6	Poor	Fair	Poor	Poor	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Two Inlets-----	6	Poor	Fair	Poor	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
Redby-----	3	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
167B:												
Baudette-----	85	Good	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Spooner-----	10	Good	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair
Moranville-----	5	Fair	Good	Good	Good	Good	Fair	Poor	Poor	Fair	Good	Poor
187:												
Haug-----	90	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Percy-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Cathro-----	3	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Boash-----	2	Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Fair	Fair	Fair
191:												
Epoufette-----	85	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Good	Fair	Poor	Fair
Cormant-----	5	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Leafriver-----	5	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Meehan-----	5	Poor	Fair	Good	Fair	Fair	Fair	Fair	Poor	Fair	Fair	Poor
202:												
Meehan-----	85	Poor	Fair	Good	Fair	Fair	Fair	Fair	Poor	Fair	Fair	Poor
Cormant-----	8	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
202:												
Wurtsmith-----	5	Poor	Fair	Fair	Fair	Good	Fair	Poor	Very poor	Fair	Good	Poor
Leafriver-----	2	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
205:												
Karlstad-----	85	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Very poor	Poor	Fair	Very poor
Sahkahtay-----	7	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair
Marquette-----	5	Poor	Fair	Fair	Poor	Fair	Poor	Very poor	Very poor	Poor	Poor	Very poor
Redby-----	2	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
Pits, gravel-----	1	---	---	---	---	---	---	---	---	---	---	---
242B:												
Marquette-----	85	Poor	Fair	Fair	Poor	Fair	Poor	Very poor	Very poor	Poor	Poor	Very poor
Karlstad-----	14	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Very poor	Poor	Fair	Very poor
Pits, gravel-----	1	---	---	---	---	---	---	---	---	---	---	---
280:												
Pelan-----	85	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Strandquist-----	10	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Good	Fair	Good
Garnes-----	3	Good	Good	Good	Good	Fair	Good	Poor	Poor	Good	Good	Poor
Marquette-----	1	Poor	Fair	Fair	Poor	Fair	Poor	Very poor	Very poor	Poor	Poor	Very poor
Pits, gravel-----	1	---	---	---	---	---	---	---	---	---	---	---

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
379:												
Percy, very cobbly-----	90	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Boash-----	3	Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Fair	Fair	Fair
Strandquist-----	3	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Good	Fair	Good
Haug-----	2	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Skagen, very cobbly-----	2	Good	Good	Good	Good	Fair	Good	Poor	Poor	Good	Good	Poor
383:												
Percy-----	90	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Boash-----	3	Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Fair	Fair	Fair
Strandquist-----	3	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Good	Fair	Good
Haug-----	2	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Skagen-----	2	Good	Good	Good	Good	Fair	Good	Poor	Poor	Good	Good	Poor
384:												
Percy, depressional-----	85	Poor	Poor	Fair	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Haug-----	7	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Percy-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Boash-----	3	Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Fair	Fair	Fair
387:												
Roliss, depressional-----	85	Poor	Poor	Fair	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Haug-----	10	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Roliss-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Good	Fair	Fair

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
404:												
Chilgren-----	85	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Good	Good	Fair
Garnes-----	5	Good	Good	Good	Good	Fair	Good	Poor	Poor	Good	Good	Poor
Grygla-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Haug-----	5	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
412:												
Mavie-----	85	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Fair	Fair	Good
Foxhome-----	5	Good	Good	Good	Fair	Fair	Fair	Poor	Poor	Good	Fair	Poor
Northwood-----	5	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Percy, very cobbly-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
432:												
Strandquist-----	85	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Good	Fair	Good
Percy, very cobbly-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Haug-----	4	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Boash-----	3	Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Fair	Fair	Fair
Foxhome-----	3	Good	Good	Good	Fair	Fair	Fair	Poor	Poor	Good	Fair	Poor
433:												
Syrene, depressional----	85	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Deerwood-----	5	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Rosewood-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Syrene-----	5	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Fair	Fair	Good

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
435:												
Syrene-----	85	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Fair	Fair	Good
Rosewood-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Syrene, depressional----	5	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Karlsruhe-----	3	Fair	Good	Good	Fair	Fair	Fair	Fair	Poor	Good	Fair	Poor
Deerwood-----	2	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
439:												
Strathcona-----	85	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Northwood-----	5	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Percy-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Grimstad-----	3	Good	Good	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair
Strandquist-----	2	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Good	Fair	Good
481:												
Kratka-----	85	Good	Good	Fair	Fair	Poor	Fair	Good	Fair	Fair	Fair	Fair
Northwood-----	5	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Percy-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Enstrom-----	3	Fair	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Good	Poor
Strandquist-----	2	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Good	Fair	Good
482:												
Grygla-----	85	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Chilgren-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Good	Good	Fair
Grygla, depressional----	5	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
482:												
Enstrom-----	3	Fair	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Good	Poor
Northwood-----	2	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
532:												
Sago-----	90	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Cathro-----	5	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Zippel-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Good
534:												
Mooselake-----	90	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Bullwinkle-----	4	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Fair	Good
Dora-----	3	Very poor	Very poor	Very poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Tawas-----	3	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Fair	Poor	Good
540:												
Seelyeville-----	90	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Cathro-----	4	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Dora-----	3	Very poor	Very poor	Very poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Markey-----	3	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
541:												
Rifle-----	90	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Tacoosh-----	10	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
543:												
Markey-----	90	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Cormant-----	5	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Seelyeville-----	5	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
544:												
Cathro-----	90	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Percy, very cobbly-----	4	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Grygla-----	3	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Seelyeville-----	3	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
546:												
Lupton-----	90	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Bullwinkle-----	4	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Fair	Good
Dora-----	3	Very poor	Very poor	Very poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Tawas-----	3	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Fair	Poor	Good
547:												
Deerwood-----	90	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Markey-----	4	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Rosewood-----	3	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Syrene-----	3	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Fair	Fair	Good

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
550:												
Dora-----	90	Very poor	Very poor	Very poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Boash-----	4	Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Fair	Fair	Fair
Seelyeville-----	3	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Woodslake-----	3	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
561:												
Bullwinkle-----	90	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Fair	Good
Lupton-----	4	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Northwood, wooded-----	4	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Chilgren-----	2	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Good	Good	Fair
563:												
Northwood-----	90	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Grygla-----	4	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Berner-----	3	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Good	Poor	Good
Strandquist-----	3	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Good	Fair	Good
565:												
Eckvoll-----	85	Fair	Fair	Good	Good	Good	Fair	Poor	Poor	Fair	Good	Poor
Chilgren-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Good	Good	Fair
Grygla-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Hiwood-----	5	Poor	Fair	Poor	Poor	Fair	Fair	Poor	Poor	Fair	Fair	Poor

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
568:												
Zippel-----	85	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Good
Augsburg, depression--	5	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Sago-----	5	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Skime-----	5	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
569:												
Wabanica-----	85	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Warroad-----	6	Good	Good	Good	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Sax-----	4	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Grano-----	3	Fair	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair
Enstrom-----	2	Fair	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Good	Poor
570:												
Faunce-----	85	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Clearriver-----	7	Poor	Good	Good	Good	Good	Fair	Fair	Very poor	Good	Good	Fair
Zimmerman-----	4	Poor	Fair	Poor	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
Meehan-----	3	Poor	Fair	Good	Fair	Fair	Fair	Fair	Poor	Fair	Fair	Poor
Pits, gravel-----	1	---	---	---	---	---	---	---	---	---	---	---
581:												
Percy-----	90	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Haug-----	5	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Boash-----	3	Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Fair	Fair	Fair
Skagen-----	2	Good	Good	Good	Good	Fair	Good	Poor	Poor	Good	Good	Poor

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
582:												
Roliss-----	85	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Good	Fair	Fair
Roliss, depressiona----	7	Poor	Poor	Fair	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Boash-----	5	Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Fair	Fair	Fair
Haug-----	3	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
583:												
Nereson-----	85	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
Percy-----	10	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Pelan-----	3	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Foxhome-----	2	Good	Good	Good	Fair	Fair	Fair	Poor	Poor	Good	Fair	Poor
627:												
Tawas-----	90	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Fair	Poor	Good
Leafriver-----	4	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Lupton-----	4	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Cormant-----	2	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
630:												
Wildwood-----	90	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Boash-----	4	Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Fair	Fair	Fair
Dora-----	4	Very poor	Very poor	Very poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Espelie-----	2	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
643:												
Huot-----	85	Good	Good	Fair	Fair	Fair	Fair	Poor	Poor	Good	Fair	Fair
Thiefriver-----	12	Good	Good	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair
Redby-----	3	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
644:												
Boash-----	85	Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Fair	Fair	Fair
Percy-----	7	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Woodslake-----	5	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Strandquist-----	3	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Good	Fair	Good
645:												
Espelie-----	85	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Grano-----	5	Fair	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair
Hilaire-----	5	Good	Good	Good	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Wildwood-----	5	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
651:												
Thiefriver-----	85	Good	Good	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair
Grano-----	5	Fair	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair
Huot-----	5	Good	Good	Fair	Fair	Fair	Fair	Poor	Poor	Good	Fair	Fair
Wildwood-----	5	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
708:												
Rushlake-----	85	Poor	Good	Fair	Fair	Good	Fair	Fair	Poor	Good	Good	Fair
Corliss-----	6	Poor	Fair	Fair	Poor	Poor	Poor	Very poor	Very poor	Fair	Fair	Very poor
Redby-----	5	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
708:												
Hangaard-----	3	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair	Good
Pits, gravel-----	1	---	---	---	---	---	---	---	---	---	---	---
712:												
Rosewood-----	85	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Deerwood-----	6	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Hangaard-----	5	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair	Good
Ulen-----	4	Good	Good	Good	Fair	Poor	Fair	Poor	Poor	Fair	Fair	Poor
721B:												
Corliss-----	85	Poor	Fair	Fair	Poor	Poor	Poor	Very poor	Very poor	Fair	Fair	Very poor
Rushlake-----	10	Poor	Good	Fair	Fair	Good	Fair	Fair	Poor	Good	Good	Fair
Hangaard-----	4	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair	Good
Pits, gravel-----	1	---	---	---	---	---	---	---	---	---	---	---
733:												
Berner-----	90	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Good	Poor	Good
Grygla-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Seelyeville-----	5	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
737:												
Mahkonce-----	85	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
Auganaush-----	10	Good	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Eckvoll-----	5	Fair	Fair	Good	Good	Good	Fair	Poor	Poor	Fair	Good	Poor
755:												
Woodslake-----	85	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Boash-----	8	Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Fair	Fair	Fair

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
755:												
Wildwood-----	5	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Dora-----	2	Very poor	Very poor	Very poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
767:												
Auganaush-----	90	Good	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Mustinka-----	5	Poor	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
Wildwood-----	3	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Mahkonce-----	2	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
794:												
Clearriver-----	85	Poor	Good	Good	Good	Good	Fair	Fair	Very poor	Good	Good	Fair
Hiwood-----	7	Poor	Fair	Poor	Poor	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Meehan-----	5	Poor	Fair	Good	Fair	Fair	Fair	Fair	Poor	Fair	Fair	Poor
Faunce-----	3	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
1002:												
Fluvaquents, frequently flooded-----	90	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Seelyeville-----	6	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Hapludalfs-----	2	Poor	Good	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Water-----	2	---	---	---	---	---	---	---	---	---	---	---
1030:												
Pits, gravel-----	75	---	---	---	---	---	---	---	---	---	---	---
Udipsamments-----	20	---	---	---	---	---	---	---	---	---	---	---

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
1030:												
Corliss-----	2	Poor	Fair	Fair	Poor	Poor	Poor	Very poor	Very poor	Fair	Fair	Very poor
Karlstad-----	2	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Very poor	Poor	Fair	Very poor
Hangaard-----	1	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair	Good
1031:												
Seelyeville, ponded-----	90	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Cathro-----	4	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Dora-----	3	Very poor	Very poor	Very poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Markey-----	3	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
1067:												
Fluvaquents, frequently flooded-----	60	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Hapludalfs-----	30	Poor	Good	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Seelyeville-----	5	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Water-----	5	---	---	---	---	---	---	---	---	---	---	---
1133B:												
Skime-----	85	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Hiwood-----	10	Poor	Fair	Poor	Poor	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Zippel-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Good
1134:												
Borup-----	55	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Glyndon-----	35	Good	Good	Good	Good	Fair	Fair	Poor	Poor	Good	Fair	Poor

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
1134:												
Augsburg, depressional--	5	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Skime-----	5	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
1144:												
Strathcona, depressional	45	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Kratka, depressional----	45	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Kratka-----	5	Good	Good	Fair	Fair	Poor	Fair	Good	Fair	Fair	Fair	Fair
Northwood-----	5	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
1154:												
Sax-----	90	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Wabanica-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Cathro-----	3	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Woodslake-----	2	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
1158:												
Skagen-----	85	Good	Good	Good	Good	Fair	Good	Poor	Poor	Good	Good	Poor
Percy-----	10	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Foxhome-----	5	Good	Good	Good	Fair	Fair	Fair	Poor	Poor	Good	Fair	Poor
1170:												
Skagen, very cobbly-----	85	Good	Good	Good	Good	Fair	Good	Poor	Poor	Good	Good	Poor
Percy, very cobbly-----	10	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Foxhome-----	5	Good	Good	Good	Fair	Fair	Fair	Poor	Poor	Good	Fair	Poor
1179B:												
Moranville-----	85	Fair	Good	Good	Good	Good	Fair	Poor	Poor	Fair	Good	Poor
Baudette-----	5	Good	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
1179B:												
Hiwood-----	5	Poor	Fair	Poor	Poor	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Spooner-----	5	Good	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair
1181:												
Rosewood-----	50	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Ulen-----	40	Good	Good	Good	Fair	Poor	Fair	Poor	Poor	Fair	Fair	Poor
Redby-----	5	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
Deerwood-----	3	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Syrene-----	2	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Fair	Fair	Good
1182:												
Warroad-----	85	Good	Good	Good	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Wabanica-----	7	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Enstrom-----	5	Fair	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Good	Poor
Sax-----	3	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
1187:												
Dora, ponded-----	90	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Seelyeville, ponded----	4	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Wildwood-----	4	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Boash-----	2	Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Fair	Fair	Fair
1191:												
Sahkahtay-----	85	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair
Cormant-----	5	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
1191:												
Deerwood-----	5	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Karlstad-----	3	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Very poor	Poor	Fair	Very poor
Redby-----	2	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
1206:												
Cormant-----	55	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Redby-----	35	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
Hiwood-----	5	Poor	Fair	Poor	Poor	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Leafriver-----	5	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
1214:												
Mustinka-----	90	Poor	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
Espelie-----	4	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Wildwood-----	4	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Dalbo-----	2	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
1274B:												
Redby-----	40	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
Hiwood-----	30	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Leafriver, wooded-----	15	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Clearriver-----	5	Poor	Good	Good	Good	Good	Fair	Fair	Very poor	Good	Good	Fair
Cormant-----	5	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Zimmerman-----	5	Poor	Fair	Poor	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
1298:												
Borup-----	90	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Augsburg, depressiona--	3	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Glyndon-----	3	Good	Good	Good	Good	Fair	Fair	Poor	Poor	Good	Fair	Poor
Sago-----	2	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Skime-----	2	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
1302:												
Foldahl-----	85	Good	Good	Good	Good	Fair	Fair	Poor	Poor	Good	Fair	Poor
Kratka-----	10	Good	Good	Fair	Fair	Poor	Fair	Good	Fair	Fair	Fair	Fair
Foxhome-----	5	Good	Good	Good	Fair	Fair	Fair	Poor	Poor	Good	Fair	Poor
1304:												
Glyndon-----	85	Good	Good	Good	Good	Fair	Fair	Poor	Poor	Good	Fair	Poor
Borup-----	10	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Skime-----	5	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
1305:												
Hilaire-----	85	Good	Good	Good	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Espelie-----	11	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Grano-----	2	Fair	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair
Redby-----	2	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
1314:												
Tacoosh-----	90	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Rifle-----	8	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Sax-----	2	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
1316:												
Wheatville-----	85	Good	Good	Good	Fair	Poor	Fair	Poor	Fair	Good	Fair	Fair
Augsburg-----	13	Good	Good	Fair	Fair	Poor	Fair	Fair	Fair	Good	Fair	Fair
Grano-----	2	Fair	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair
1326:												
Augsburg, depressional--	45	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Wabanica, depressional--	45	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Sax-----	6	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Espelie-----	2	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Zippel-----	2	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Good
1327B:												
Karlstad-----	65	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Very poor	Poor	Fair	Very poor
Marquette-----	25	Poor	Poor	Fair	Poor	Fair	Poor	Very poor	Very poor	Poor	Poor	Very poor
Sahkahtay-----	7	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair
Redby-----	3	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
1328:												
Northwood, wooded-----	90	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Berner, wooded-----	5	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Fair	Poor	Good
Grygla-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
1333:												
Dora, wooded-----	90	Very poor	Very poor	Very poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Lupton-----	4	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
1333: Wildwood-----	4	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Auganaush-----	2	Good	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
1356: Water, miscellaneous.												
1399B: Two Inlets-----	85	Poor	Fair	Poor	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
Wurtsmith-----	6	Poor	Fair	Fair	Fair	Good	Fair	Poor	Very poor	Fair	Good	Poor
Zimmerman-----	6	Poor	Fair	Poor	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
Meehan-----	3	Poor	Fair	Good	Fair	Fair	Fair	Fair	Poor	Fair	Fair	Poor
1401: Grygla, depressional----	90	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Northwood, wooded-----	5	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Chilgren-----	3	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Good	Good	Fair
Grygla-----	2	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
1402: Leafriver, wooded-----	90	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Cormant-----	4	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Tawas-----	4	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Fair	Poor	Good
Redby-----	2	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
1404:												
Berner, wooded-----	90	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Fair	Poor	Good
Lupton-----	4	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Northwood, wooded-----	4	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Grygla-----	2	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
1405:												
Lallie-----	90	Very poor	Very poor	Poor	Very poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Sax-----	7	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Wabanica-----	3	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
1414:												
Nereson, very cobbly----	85	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
Percy, very cobbly-----	10	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Pelan-----	3	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
Foxhome-----	2	Good	Good	Good	Fair	Fair	Fair	Poor	Poor	Good	Fair	Poor
1428:												
Karlsruhe-----	85	Fair	Good	Good	Fair	Fair	Fair	Fair	Poor	Good	Fair	Poor
Syrene-----	10	Fair	Fair	Fair	Fair	Poor	Fair	Good	Good	Fair	Fair	Good
Ulen-----	5	Good	Good	Good	Fair	Poor	Fair	Poor	Poor	Fair	Fair	Poor
1444:												
Wurtsmith-----	85	Poor	Fair	Fair	Fair	Good	Fair	Poor	Very poor	Fair	Good	Poor
Meehan-----	10	Poor	Fair	Good	Fair	Fair	Fair	Fair	Poor	Fair	Fair	Poor

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
1444:												
Clearriver-----	2	Poor	Good	Good	Good	Good	Fair	Fair	Very poor	Good	Good	Fair
Two Inlets-----	2	Poor	Fair	Poor	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
Cormant-----	1	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
1448:												
Grano-----	90	Poor	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair
Percy-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Augsburg-----	3	Good	Good	Fair	Fair	Poor	Fair	Fair	Fair	Good	Fair	Fair
Woodslake-----	2	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
1449:												
Grano-----	90	Fair	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair
Percy-----	5	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
Augsburg-----	3	Good	Good	Fair	Fair	Poor	Fair	Fair	Fair	Good	Fair	Fair
Woodslake-----	2	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
1807:												
Cathro, ponded-----	90	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Haug-----	4	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Seelyeville, ponded-----	4	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Percy-----	2	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Fair
1808:												
Markey, ponded-----	90	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Leafriver-----	4	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good

Table 18.--Wildlife Habitat--Continued

Map symbol and component name	Percent of map unit	Potential for habitat elements								Potential as habitat for--		
		Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
1808:												
Seelyeville, ponded-----	4	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Cormant-----	2	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
1918:												
Croke-----	85	Good	Good	Good	Good	Fair	Fair	Poor	Fair	Good	Fair	Poor
Augsburg-----	13	Good	Good	Fair	Fair	Poor	Fair	Fair	Fair	Good	Fair	Fair
Grano-----	2	Fair	Poor	Fair	Fair	Fair	Poor	Poor	Good	Good	Fair	Fair
1923B:												
Garnes, very stony-----	85	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
Chilgren-----	10	Good	Good	Fair	Fair	Fair	Fair	Good	Fair	Good	Good	Fair
Eckvoll-----	3	Fair	Fair	Good	Good	Good	Fair	Poor	Poor	Fair	Good	Poor
Pelan-----	2	Poor	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
1984:												
Leafriver-----	90	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Cormant-----	5	Poor	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Markey-----	3	Very poor	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Redby-----	2	Poor	Fair	Good	Fair	Good	Fair	Fair	Poor	Fair	Good	Poor
W: Water.												

Table 19.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
47: Colvin-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
Bearden-----	5	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Moderate: wetness
Grano-----	5	Severe: wetness cutbanks cave	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: too clayey wetness
Sax-----	5	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
48B: Hiwood-----	85	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
Redby-----	7	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
Clearriver-----	3	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Slight	Severe: droughty
Cormant-----	3	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Zimmerman-----	2	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
52: Augsburg-----	85	Severe: wetness cutbanks cave	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
52:							
Croke-----	5	Severe: cutbanks cave	Slight	Severe: shrink-swell	Slight	Severe: frost action	Slight
Grano-----	5	Severe: wetness cutbanks cave	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Sago-----	5	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
59:							
Grimstad-----	85	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness
Strathcona-----	12	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Foxhome-----	3	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
64:							
Ulen-----	85	Severe: cutbanks cave	Slight	Severe: wetness	Slight	Moderate: frost action	Moderate: droughty
Rosewood-----	10	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Redby-----	3	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
Rushlake-----	2	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Severe: droughty
65:							
Foxhome-----	85	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
Strandquist-----	12	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
65: Skagen-----	3	Moderate: wetness	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
67: Bearden-----	85	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Moderate: wetness
Colvin-----	15	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
77: Garnes-----	85	Moderate: wetness	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
Chilgren-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Eckvoll-----	3	Severe: cutbanks cave	Slight	Moderate: shrink-swell wetness	Slight	Severe: frost action	Slight
Pelan-----	2	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
111: Hangaard-----	90	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness droughty
Deerwood-----	5	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: excess humus ponding
Rushlake-----	3	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Severe: droughty
Rosewood-----	2	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
116:							
Redby-----	85	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
Cormant-----	8	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Hiwood-----	6	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
Leafriver-----	1	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
117:							
Cormant-----	85	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Leafriver-----	7	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Epoufette-----	3	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness droughty
Redby-----	3	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
Grygla, depressional----	2	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: ponding
133:							
Dalbo-----	85	Moderate: too clayey wetness	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Slight
Mustinka-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
133: Moranville-----	5	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell wetness	Moderate: shrink-swell	Severe: frost action low strength	Moderate: droughty
145: Enstrom-----	85	Severe: cutbanks cave	Slight	Moderate: shrink-swell wetness	Slight	Moderate: frost action	Moderate: droughty
Grygla-----	10	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Redby-----	4	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
Pelan-----	1	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
147: Spooner-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Baudette-----	5	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: wetness	Moderate: shrink-swell	Severe: frost action low strength	Slight
Grygla-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Sago-----	5	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
158B: Zimmerman-----	85	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
Hiwood-----	6	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
158B: Two Inlets-----	6	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: small stones droughty
Redby-----	3	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
167B: Baudette-----	85	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: wetness	Moderate: shrink-swell	Severe: frost action low strength	Slight
Spooner-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Moranville-----	5	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell wetness	Moderate: shrink-swell	Severe: frost action low strength	Moderate: droughty
187: Haug-----	90	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Cathro-----	3	Severe: excess humus ponding	Severe: subsides ponding	Severe: subsides ponding	Severe: subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Boash-----	2	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
191: Epoufette-----	85	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness droughty

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
191:							
Cormant-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Leafriver-----	5	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Meehan-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Moderate: frost action wetness	Severe: too acid
202:							
Meehan-----	85	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Moderate: frost action wetness	Severe: too acid
Cormant-----	8	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Wurtsmith-----	5	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Slight	Moderate: droughty
Leafriver-----	2	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
205:							
Karlstad-----	85	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
Sahkahtay-----	7	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Marquette-----	5	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty
Redby-----	2	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
Pits, gravel-----	1	---	---	---	---	---	---

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
242B:							
Marquette-----	85	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty
Karlstad-----	14	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
Pits, gravel-----	1	---	---	---	---	---	---
280:							
Pelan-----	85	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
Strandquist-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Garnes-----	3	Moderate: wetness	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
Marquette-----	1	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty
Pits, gravel-----	1	---	---	---	---	---	---
379:							
Percy, very cobbly-----	90	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Boash-----	3	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Strandquist-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Haug-----	2	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Skagen, very cobbly-----	2	Moderate: wetness	Slight	Moderate: wetness	Slight	Severe: frost action	Slight

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
383:							
Percy-----	90	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Boash-----	3	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Strandquist-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Haug-----	2	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Skagen-----	2	Moderate: wetness	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
384:							
Percy, depressiona-----	85	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: ponding
Haug-----	7	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Boash-----	3	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
387:							
Roliss, depressiona-----	85	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action low strength ponding	Severe: ponding

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
387: Haug-----	10	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Roliss-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
404: Chilgren-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Garnes-----	5	Moderate: wetness	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
Grygla-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Haug-----	5	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
412: Mavie-----	85	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Foxhome-----	5	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
Northwood-----	5	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Percy, very cobbly-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
432: Strandquist-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
432:							
Percy, very cobbly-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Haug-----	4	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Boash-----	3	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Foxhome-----	3	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
433:							
Syrene, depressional----	85	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
Deerwood-----	5	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: excess humus ponding
Rosewood-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Syrene-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
435:							
Syrene-----	85	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Rosewood-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Syrene, depressional----	5	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
435:							
Karlsruhe-----	3	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
Deerwood-----	2	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: excess humus ponding
439:							
Strathcona-----	85	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Northwood-----	5	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Grimstad-----	3	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness
Strandquist-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
481:							
Kratka-----	85	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Northwood-----	5	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
481: Enstrom-----	3	Severe: cutbanks cave	Slight	Moderate: shrink-swell wetness	Slight	Moderate: frost action	Moderate: droughty
Strandquist-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
482: Grygla-----	85	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Chilgren-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Grygla, depressional----	5	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: ponding
Enstrom-----	3	Severe: cutbanks cave	Slight	Moderate: shrink-swell wetness	Slight	Moderate: frost action	Moderate: droughty
Northwood-----	2	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
532: Sago-----	90	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Cathro-----	5	Severe: excess humus ponding	Severe: subsides ponding	Severe: subsides ponding	Severe: subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Zippel-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
534: Mooselake-----	90	Severe: excess humus wetness	Severe: low strength wetness	Severe: low strength wetness	Severe: low strength wetness	Severe: frost action wetness	Severe: excess humus wetness
Bullwinkle-----	4	Severe: excess humus wetness	Severe: low strength wetness subsides	Severe: wetness subsides	Severe: low strength wetness subsides	Severe: frost action wetness subsides	Severe: excess humus wetness
Dora-----	3	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: shrink-swell subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Tawas-----	3	Severe: excess humus wetness cutbanks cave	Severe: low strength wetness subsides	Severe: wetness subsides	Severe: low strength wetness subsides	Severe: frost action wetness subsides	Severe: excess humus wetness
540: Seelyeville-----	90	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Cathro-----	4	Severe: excess humus ponding	Severe: subsides ponding	Severe: subsides ponding	Severe: subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Dora-----	3	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: shrink-swell subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Markey-----	3	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
541: Rifle-----	90	Severe: excess humus ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: excess humus ponding

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
541: Tacoosh-----	10	Severe: excess humus ponding	Severe: low strength ponding	Severe: ponding	Severe: low strength ponding	Severe: frost action ponding	Severe: excess humus ponding
543: Markey-----	90	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Cormant-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Seelyeville-----	5	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
544: Cathro-----	90	Severe: excess humus ponding	Severe: subsides ponding	Severe: subsides ponding	Severe: subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Percy, very cobbly-----	4	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Grygla-----	3	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Seelyeville-----	3	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
546: Lupton-----	90	Severe: excess humus wetness	Severe: low strength wetness subsides	Severe: low strength wetness subsides	Severe: low strength wetness subsides	Severe: frost action wetness subsides	Severe: excess humus wetness

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
546: Bullwinkle-----	4	Severe: excess humus wetness	Severe: low strength wetness subsides	Severe: wetness subsides	Severe: low strength wetness subsides	Severe: frost action wetness subsides	Severe: excess humus wetness
Dora-----	3	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: shrink-swell subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Tawas-----	3	Severe: excess humus wetness cutbanks cave	Severe: low strength wetness subsides	Severe: wetness subsides	Severe: low strength wetness subsides	Severe: frost action wetness subsides	Severe: excess humus wetness
547: Deerwood-----	90	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: excess humus ponding
Markey-----	4	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Rosewood-----	3	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Syrene-----	3	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
550: Dora-----	90	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: shrink-swell subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Boash-----	4	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
550: Seelyeville-----	3	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Woodslake-----	3	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: too clayey ponding
561: Bullwinkle-----	90	Severe: excess humus wetness	Severe: low strength wetness subsides	Severe: wetness subsides	Severe: low strength wetness subsides	Severe: frost action wetness subsides	Severe: excess humus wetness
Lupton-----	4	Severe: excess humus wetness	Severe: low strength wetness subsides	Severe: low strength wetness subsides	Severe: low strength wetness subsides	Severe: frost action wetness subsides	Severe: excess humus wetness
Northwood, wooded-----	4	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Chilgren-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
563: Northwood-----	90	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Grygla-----	4	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Berner-----	3	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
563: Strandquist-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
565: Eckvoll-----	85	Severe: cutbanks cave	Slight	Moderate: shrink-swell wetness	Slight	Severe: frost action	Slight
Chilgren-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Grygla-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Hiwood-----	5	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
568: Zippel-----	85	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Augsburg, depressional--	5	Severe: ponding cutbanks cave	Severe: ponding	Severe: shrink-swell ponding	Severe: ponding	Severe: frost action ponding	Severe: ponding
Sago-----	5	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Skime-----	5	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
569: Wabanica-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Warroad-----	6	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
569: Sax-----	4	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Grano-----	3	Severe: wetness cutbanks cave	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Enstrom-----	2	Severe: cutbanks cave	Slight	Moderate: shrink-swell wetness	Slight	Moderate: frost action	Moderate: droughty
570: Faunce-----	85	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty
Clearriver-----	7	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Slight	Severe: droughty
Zimmerman-----	4	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
Meehan-----	3	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Moderate: frost action wetness	Severe: too acid
Pits, gravel-----	1	---	---	---	---	---	---
581: Percy-----	90	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Haug-----	5	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Boash-----	3	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Skagen-----	2	Moderate: wetness	Slight	Moderate: wetness	Slight	Severe: frost action	Slight

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
582:							
Roliss-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
Roliss, depression-----	7	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action low strength ponding	Severe: ponding
Boash-----	5	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Haug-----	3	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
583:							
Nereson-----	85	Moderate: wetness	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
Percy-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Pelan-----	3	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
Foxhome-----	2	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
627:							
Tawas-----	90	Severe: excess humus wetness cutbanks cave	Severe: low strength wetness subsides	Severe: wetness subsides	Severe: low strength wetness subsides	Severe: frost action wetness subsides	Severe: excess humus wetness
Leafriver-----	4	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
627: Lupton-----	4	Severe: excess humus wetness	Severe: low strength wetness subsides	Severe: low strength wetness subsides	Severe: low strength wetness subsides	Severe: frost action wetness subsides	Severe: excess humus wetness
Cormant-----	2	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
630: Wildwood-----	90	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: excess humus ponding
Boash-----	4	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Dora-----	4	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: shrink-swell subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Espelie-----	2	Severe: wetness cutbanks cave	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
643: Huot-----	85	Severe: cutbanks cave	Slight	Severe: shrink-swell	Slight	Severe: frost action	Moderate: droughty
Thiefriver-----	12	Severe: wetness cutbanks cave	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Redby-----	3	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
644: Boash-----	85	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Percy-----	7	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Woodslake-----	5	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: too clayey ponding
Strandquist-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
645: Espelie-----	85	Severe: wetness cutbanks cave	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Grano-----	5	Severe: wetness cutbanks cave	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Hilaire-----	5	Severe: cutbanks cave	Slight	Severe: shrink-swell	Slight	Severe: frost action	Moderate: droughty
Wildwood-----	5	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: excess humus ponding
651: Thiefriver-----	85	Severe: wetness cutbanks cave	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Grano-----	5	Severe: wetness cutbanks cave	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
651: Huot-----	5	Severe: cutbanks cave	Slight	Severe: shrink-swell	Slight	Severe: frost action	Moderate: droughty
Wildwood-----	5	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: excess humus ponding
708: Rushlake-----	85	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Severe: droughty
Corliss-----	6	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty
Redby-----	5	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
Hangaard-----	3	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness droughty
Pits, gravel-----	1	---	---	---	---	---	---
712: Rosewood-----	85	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Deerwood-----	6	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: excess humus ponding
Hangaard-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness droughty
Ulen-----	4	Severe: cutbanks cave	Slight	Severe: wetness	Slight	Moderate: frost action	Moderate: droughty
721B: Corliss-----	85	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
721B: Rushlake-----	10	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Severe: droughty
Hangaard-----	4	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness droughty
Pits, gravel-----	1	---	---	---	---	---	---
733: Berner-----	90	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Grygla-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Seelyeville-----	5	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
737: Mahkonce-----	85	Moderate: too clayey wetness	Severe: shrink-swell	Moderate: shrink-swell wetness	Severe: shrink-swell	Severe: frost action low strength shrink-swell	Slight
Auganaush-----	10	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Eckvoll-----	5	Severe: cutbanks cave	Slight	Moderate: shrink-swell wetness	Slight	Severe: frost action	Slight
755: Woodslake-----	85	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: too clayey ponding

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
755:							
Boash-----	8	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Wildwood-----	5	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: excess humus ponding
Dora-----	2	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: shrink-swell subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
767:							
Auganaush-----	90	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Mustinka-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
Wildwood-----	3	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: excess humus ponding
Mahkonce-----	2	Moderate: too clayey wetness	Severe: shrink-swell	Moderate: shrink-swell wetness	Severe: shrink-swell	Severe: frost action low strength shrink-swell	Slight
794:							
Clearriver-----	85	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Slight	Severe: droughty
Hiwood-----	7	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
794:							
Meehan-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Moderate: frost action wetness	Severe: too acid
Faunce-----	3	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty
1002:							
Fluvaquents, frequently flooded-----	90	Severe: ponding cutbanks cave	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding frost action ponding	Severe: flooding ponding
Seelyeville-----	6	Severe: excess humus ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: frost action ponding	Severe: excess humus ponding
Hapludalfs-----	2	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: frost action low strength slope	Severe: slope
Water-----	2	---	---	---	---	---	---
1030:							
Pits, gravel-----	75	---	---	---	---	---	---
Udipsamments-----	20	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Corliss-----	2	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty
Karlstad-----	2	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
Hangaard-----	1	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness droughty

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1031: Seelyeville, ponded-----	90	Severe: excess humus ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: frost action ponding	Severe: excess humus ponding
Cathro-----	4	Severe: excess humus ponding	Severe: subsides ponding	Severe: subsides ponding	Severe: subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Dora-----	3	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: shrink-swell subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Markey-----	3	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
1067: Fluvaquents, frequently flooded-----	60	Severe: ponding cutbanks cave	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding frost action ponding	Severe: flooding ponding
Hapludalfs-----	30	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: frost action low strength slope	Severe: slope
Seelyeville-----	5	Severe: excess humus ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: frost action ponding	Severe: excess humus ponding
Water-----	5	---	---	---	---	---	---
1133B: Skime-----	85	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
Hiwood-----	10	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1133B: Zippel-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
1134: Borup-----	55	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Glyndon-----	35	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
Augsburg, depressional--	5	Severe: ponding cutbanks cave	Severe: ponding	Severe: shrink-swell ponding	Severe: ponding	Severe: frost action ponding	Severe: ponding
Skime-----	5	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
1144: Strathcona, depressional	45	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: ponding
Kratka, depressional----	45	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
Kratka-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Northwood-----	5	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
1154: Sax-----	90	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Wabanica-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1154: Cathro-----	3	Severe: excess humus ponding	Severe: subsides ponding	Severe: subsides ponding	Severe: subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Woodslake-----	2	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: too clayey ponding
1158: Skagen-----	85	Moderate: wetness	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
Percy-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Foxhome-----	5	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
1170: Skagen, very cobbly----	85	Moderate: wetness	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
Percy, very cobbly----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Foxhome-----	5	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
1179B: Moranville-----	85	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell wetness	Moderate: shrink-swell	Severe: frost action low strength	Moderate: droughty
Baudette-----	5	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: wetness	Moderate: shrink-swell	Severe: frost action low strength	Slight
Hiwood-----	5	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1179B: Spoonerville-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
1181: Rosewood-----	50	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Ulen-----	40	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
Redby-----	5	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
Deerwood-----	3	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: excess humus ponding
Syrene-----	2	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
1182: Warroad-----	85	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Wabanica-----	7	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Enstrom-----	5	Severe: cutbanks cave	Slight	Moderate: shrink-swell wetness	Slight	Moderate: frost action	Moderate: droughty
Sax-----	3	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1187: Dora, ponded-----	90	Severe: excess humus ponding	Severe: low strength ponding	Severe: shrink-swell ponding	Severe: low strength ponding	Severe: frost action ponding	Severe: excess humus ponding
Seelyeville, ponded----	4	Severe: excess humus ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: frost action ponding	Severe: excess humus ponding
Wildwood-----	4	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: excess humus ponding
Boash-----	2	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
1191: Sahkahtay-----	85	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Cormant-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Deerwood-----	5	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: excess humus ponding
Karlstad-----	3	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
Redby-----	2	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
1206: Cormant-----	55	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Redby-----	35	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1206: Hiwood-----	5	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
Leafriver-----	5	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
1214: Mustinka-----	90	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
Espelie-----	4	Severe: wetness cutbanks cave	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Wildwood-----	4	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: excess humus ponding
Dalbo-----	2	Moderate: too clayey wetness	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Slight
1274B: Redby-----	40	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
Hiwood-----	30	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
Leafriver, wooded-----	15	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Clearriver-----	5	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Slight	Severe: droughty
Cormant-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1274B: Zimmerman-----	5	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
1298: Borup-----	90	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Augsburg, depressional--	3	Severe: ponding cutbanks cave	Severe: ponding	Severe: shrink-swell ponding	Severe: ponding	Severe: frost action ponding	Severe: ponding
Glyndon-----	3	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
Sago-----	2	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Skime-----	2	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
1302: Foldahl-----	85	Severe: cutbanks cave	Slight	Moderate: shrink-swell wetness	Slight	Severe: frost action	Slight
Kratka-----	10	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Foxhome-----	5	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
1304: Glyndon-----	85	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
Borup-----	10	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Skime-----	5	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1305:							
Hilaire-----	85	Severe: cutbanks cave	Slight	Severe: shrink-swell	Slight	Severe: frost action	Moderate: droughty
Espelie-----	11	Severe: wetness cutbanks cave	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Grano-----	2	Severe: wetness cutbanks cave	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Redby-----	2	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
1314:							
Tacoosh-----	90	Severe: excess humus ponding	Severe: low strength ponding	Severe: ponding	Severe: low strength ponding	Severe: frost action ponding	Severe: excess humus ponding
Rifle-----	8	Severe: excess humus ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: excess humus ponding
Sax-----	2	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
1316:							
Wheatville-----	85	Severe: cutbanks cave	Slight	Severe: shrink-swell	Slight	Severe: frost action	Slight
Augsburg-----	13	Severe: wetness cutbanks cave	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Grano-----	2	Severe: wetness cutbanks cave	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1326: Augsburg, depressional--	45	Severe: ponding cutbanks cave	Severe: ponding	Severe: shrink-swell ponding	Severe: ponding	Severe: frost action ponding	Severe: ponding
Wabanica, depressional--	45	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action low strength ponding	Severe: ponding
Sax-----	6	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Espelie-----	2	Severe: wetness cutbanks cave	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
Zippel-----	2	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
1327B: Karlstad-----	65	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
Marquette-----	25	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty
Sahkahtay-----	7	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Redby-----	3	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
1328: Northwood, wooded-----	90	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Berner, wooded-----	5	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1328: Grygla-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
1333: Dora, wooded-----	90	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: shrink-swell subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Lupton-----	4	Severe: excess humus wetness	Severe: low strength wetness subsides	Severe: low strength wetness subsides	Severe: low strength wetness subsides	Severe: frost action wetness subsides	Severe: excess humus wetness
Wildwood-----	4	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: excess humus ponding
Auganaush-----	2	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
1356: Water, miscellaneous.							
1399B: Two Inlets-----	85	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: small stones droughty
Wurtsmith-----	6	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Slight	Moderate: droughty
Zimmerman-----	6	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
Meehan-----	3	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Moderate: frost action wetness	Severe: too acid

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1401: Grygla, depressional----	90	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: ponding
Northwood, wooded-----	5	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Chilgren-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Grygla-----	2	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
1402: Leafriver, wooded-----	90	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Cormant-----	4	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Tawas-----	4	Severe: excess humus wetness cutbanks cave	Severe: low strength wetness subsides	Severe: wetness subsides	Severe: low strength wetness subsides	Severe: frost action wetness subsides	Severe: excess humus wetness
Redby-----	2	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
1404: Berner, wooded-----	90	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Lupton-----	4	Severe: excess humus wetness	Severe: low strength wetness subsides	Severe: low strength wetness subsides	Severe: low strength wetness subsides	Severe: frost action wetness subsides	Severe: excess humus wetness

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1404: Northwood, wooded-----	4	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Grygla-----	2	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
1405: Lallie-----	90	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: excess salt ponding
Sax-----	7	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Wabanica-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
1414: Nereson, very cobbly----	85	Moderate: wetness	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
Percy, very cobbly-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Pelan-----	3	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
Foxhome-----	2	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
1428: Karlsruhe-----	85	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
Syrene-----	10	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1428: Ulen-----	5	Severe: cutbanks cave	Slight	Severe: wetness	Slight	Moderate: frost action	Moderate: droughty
1444: Wurtsmith-----	85	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Slight	Moderate: droughty
Meehan-----	10	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Moderate: frost action wetness	Severe: too acid
Clearriver-----	2	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Slight	Severe: droughty
Two Inlets-----	2	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: small stones droughty
Cormant-----	1	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
1448: Grano-----	90	Severe: wetness cutbanks cave	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: too clayey wetness
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Augsburg-----	3	Severe: wetness cutbanks cave	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Woodslake-----	2	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: too clayey ponding
1449: Grano-----	90	Severe: wetness cutbanks cave	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1449:							
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Augsburg-----	3	Severe: wetness cutbanks cave	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Woodslake-----	2	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: too clayey ponding
1807:							
Cathro, ponded-----	90	Severe: excess humus ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Haug-----	4	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Seelyeville, ponded----	4	Severe: excess humus ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: frost action ponding	Severe: excess humus ponding
Percy-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
1808:							
Markey, ponded-----	90	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Leafriver-----	4	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Seelyeville, ponded----	4	Severe: excess humus ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: frost action ponding	Severe: excess humus ponding

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1808: Cormant-----	2	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
1918: Croke-----	85	Severe: cutbanks cave	Slight	Severe: shrink-swell	Slight	Severe: frost action	Slight
Augsburg-----	13	Severe: wetness cutbanks cave	Severe: wetness	Severe: shrink-swell wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Grano-----	2	Severe: wetness cutbanks cave	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: wetness
1923B: Garnes, very stony-----	85	Moderate: wetness	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
Chilgren-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Eckvoll-----	3	Severe: cutbanks cave	Slight	Moderate: shrink-swell wetness	Slight	Severe: frost action	Slight
Pelan-----	2	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Moderate: droughty
1984: Leafriver-----	90	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: excess humus ponding
Cormant-----	5	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Markey-----	3	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding

Table 19.--Building Site Development--Continued

Map symbol and component name	Percent of map unit	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1984: Redby----- W: Water.	2	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty

Table 20.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
47:						
Colvin-----	85	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Bearden-----	5	Severe: percs slowly wetness	Slight	Severe: wetness	Severe: wetness	Poor: hard to pack
Grano-----	5	Severe: percs slowly wetness	Slight	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
Sax-----	5	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: ponding	Poor: ponding
48B:						
Hiwood-----	85	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Redby-----	7	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Clearriver-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Cormant-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Zimmerman-----	2	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy
52:						
Augsburg-----	85	Severe: percs slowly wetness	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey wetness
Croke-----	5	Severe: percs slowly wetness	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey
Grano-----	5	Severe: percs slowly wetness	Slight	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
52: Sago-----	5	Severe: ponding	Severe: excess humus seepage ponding	Severe: too sandy ponding	Severe: ponding	Poor: too sandy ponding
59: Grimstad-----	85	Severe: wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: wetness
Strathcona-----	12	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
Foxhome-----	3	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
64: Ulen-----	85	Severe: wetness poor filter	Severe: seepage wetness	Severe: too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Rosewood-----	10	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Redby-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Rushlake-----	2	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy
65: Foxhome-----	85	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
Strandquist-----	12	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: wetness	Poor: wetness
Skagen-----	3	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: seepage wetness	Fair: wetness
67: Bearden-----	85	Severe: percs slowly wetness	Slight	Severe: wetness	Severe: wetness	Poor: hard to pack
Colvin-----	15	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
77:						
Garnes-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Fair: small stones wetness
Chilgren-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Eckvoll-----	3	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
Pelan-----	2	Severe: wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: wetness
111:						
Hangaard-----	90	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Deerwood-----	5	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Rushlake-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy
Rosewood-----	2	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
116:						
Redby-----	85	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Cormant-----	8	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Hiwood-----	6	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Leafriver-----	1	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
117:						
Cormant-----	85	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
117:						
Leafriver-----	7	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Epoufette-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy
Redby-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Grygla, depressional---	2	Severe: percs slowly ponding poor filter	Severe: seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
133:						
Dalbo-----	85	Severe: percs slowly wetness	Severe: wetness	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey
Mustinka-----	10	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: hard to pack wetness
Moranville-----	5	Severe: percs slowly wetness	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
145:						
Enstrom-----	85	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
Grygla-----	10	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
Redby-----	4	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Pelan-----	1	Severe: wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: wetness
147:						
Spooner-----	85	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: wetness	Poor: wetness
Baudette-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Fair: wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
147:						
Grygla-----	5	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
Sago-----	5	Severe: ponding	Severe: excess humus seepage ponding	Severe: too sandy ponding	Severe: ponding	Poor: too sandy ponding
158B:						
Zimmerman-----	85	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy
Hiwood-----	6	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Two Inlets-----	6	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Redby-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
167B:						
Baudette-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Fair: wetness
Spooner-----	10	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: wetness	Poor: wetness
Moranville-----	5	Severe: percs slowly wetness	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
187:						
Haug-----	90	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: ponding	Poor: ponding
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Cathro-----	3	Severe: percs slowly ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
Boash-----	2	Severe: percs slowly wetness	Moderate: seepage	Severe: wetness	Severe: wetness	Poor: wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
191:						
Epoufette-----	85	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy
Cormant-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Leafriver-----	5	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Meehan-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
202:						
Meehan-----	85	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Cormant-----	8	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Wurtsmith-----	5	Severe: wetness poor filter	Severe: seepage	Severe: seepage too sandy wetness	Severe: seepage	Poor: seepage too sandy
Leafriver-----	2	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
205:						
Karlstad-----	85	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy
Sahkahtay-----	7	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy
Marquette-----	5	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Redby-----	2	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Pits, gravel-----	1	---	---	---	---	---

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
242B:						
Marquette-----	85	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Karlstad-----	14	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy
Pits, gravel-----	1	---	---	---	---	---
280:						
Pelan-----	85	Severe: wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: wetness
Strandquist-----	10	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: wetness	Poor: wetness
Garnes-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Fair: small stones wetness
Marquette-----	1	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Pits, gravel-----	1	---	---	---	---	---
379:						
Percy, very cobbly----	90	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Boash-----	3	Severe: percs slowly wetness	Moderate: seepage	Severe: wetness	Severe: wetness	Poor: wetness
Strandquist-----	3	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: wetness	Poor: wetness
Haug-----	2	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: ponding	Poor: ponding
Skagen, very cobbly----	2	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: seepage wetness	Fair: wetness
383:						
Percy-----	90	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Boash-----	3	Severe: percs slowly wetness	Moderate: seepage	Severe: wetness	Severe: wetness	Poor: wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
383:						
Strandquist-----	3	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: wetness	Poor: wetness
Haug-----	2	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: ponding	Poor: ponding
Skagen-----	2	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: seepage wetness	Fair: wetness
384:						
Percy, depressional----	85	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Poor: ponding
Haug-----	7	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: ponding	Poor: ponding
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Boash-----	3	Severe: percs slowly wetness	Moderate: seepage	Severe: wetness	Severe: wetness	Poor: wetness
387:						
Roliss, depressional---	85	Severe: percs slowly ponding	Severe: ponding	Severe: ponding	Severe: ponding	Poor: ponding
Haug-----	10	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: ponding	Poor: ponding
Roliss-----	5	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
404:						
Chilgren-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Garnes-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Fair: small stones wetness
Grygla-----	5	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
Haug-----	5	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: ponding	Poor: ponding

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
412:						
Mavie-----	85	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
Foxhome-----	5	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
Northwood-----	5	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
Percy, very cobbly----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
432:						
Strandquist-----	85	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: wetness	Poor: wetness
Percy, very cobbly----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Haug-----	4	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: ponding	Poor: ponding
Boash-----	3	Severe: percs slowly wetness	Moderate: seepage	Severe: wetness	Severe: wetness	Poor: wetness
Foxhome-----	3	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
433:						
Syrene, depressional---	85	Severe: ponding poor filter	Severe: seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Deerwood-----	5	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Rosewood-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Syrene-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
435:						
Syrene-----	85	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Rosewood-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Syrene, depressional---	5	Severe: ponding poor filter	Severe: seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Karlsruhe-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Deerwood-----	2	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
439:						
Strathcona-----	85	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
Northwood-----	5	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Grimstad-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: wetness
Strandquist-----	2	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: wetness	Poor: wetness
481:						
Kratka-----	85	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
Northwood-----	5	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
481: Enstrom-----	3	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
Strandquist-----	2	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: wetness	Poor: wetness
482: Grygla-----	85	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
Chilgren-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Grygla, depressional---	5	Severe: percs slowly ponding poor filter	Severe: seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
Enstrom-----	3	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
Northwood-----	2	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
532: Sago-----	90	Severe: ponding	Severe: excess humus seepage ponding	Severe: too sandy ponding	Severe: ponding	Poor: too sandy ponding
Cathro-----	5	Severe: percs slowly ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
Zippel-----	5	Severe: wetness	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: wetness
534: Mooselake-----	90	Severe: wetness	Severe: excess humus seepage wetness	Severe: excess humus seepage wetness	Severe: seepage wetness	Poor: excess humus wetness
Bullwinkle-----	4	Severe: percs slowly wetness	Severe: excess humus seepage wetness	Severe: excess humus wetness	Severe: seepage wetness	Poor: excess humus wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
534:						
Dora-----	3	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: too clayey ponding	Severe: seepage ponding	Poor: hard to pack too clayey ponding
Tawas-----	3	Severe: percs slowly wetness subsides	Severe: excess humus seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
540:						
Seelyeville-----	90	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
Cathro-----	4	Severe: percs slowly ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
Dora-----	3	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: too clayey ponding	Severe: seepage ponding	Poor: hard to pack too clayey ponding
Markey-----	3	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
541:						
Rifle-----	90	Severe: ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
Tacoosh-----	10	Severe: percs slowly ponding	Severe: excess humus seepage ponding	Severe: excess humus ponding	Severe: seepage ponding	Poor: excess humus ponding
543:						
Markey-----	90	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Cormant-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Seelyeville-----	5	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
544: Cathro-----	90	Severe: percs slowly ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
Percy, very cobbly----	4	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Grygla-----	3	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
Seelyeville-----	3	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
546: Lupton-----	90	Severe: percs slowly wetness subsides	Severe: excess humus seepage wetness	Severe: excess humus seepage wetness	Severe: seepage wetness	Poor: excess humus wetness
Bullwinkle-----	4	Severe: percs slowly wetness	Severe: excess humus seepage wetness	Severe: excess humus wetness	Severe: seepage wetness	Poor: excess humus wetness
Dora-----	3	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: too clayey ponding	Severe: seepage ponding	Poor: hard to pack too clayey ponding
Tawas-----	3	Severe: percs slowly wetness subsides	Severe: excess humus seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
547: Deerwood-----	90	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Markey-----	4	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Rosewood-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Syrene-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
550:						
Dora-----	90	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: too clayey ponding	Severe: seepage ponding	Poor: hard to pack too clayey ponding
Boash-----	4	Severe: percs slowly wetness	Moderate: seepage	Severe: wetness	Severe: wetness	Poor: wetness
Seelyeville-----	3	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
Woodslake-----	3	Severe: percs slowly ponding	Severe: ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding
561:						
Bullwinkle-----	90	Severe: percs slowly wetness	Severe: excess humus seepage wetness	Severe: excess humus wetness	Severe: seepage wetness	Poor: excess humus wetness
Lupton-----	4	Severe: percs slowly wetness subsides	Severe: excess humus seepage wetness	Severe: excess humus seepage wetness	Severe: seepage wetness	Poor: excess humus wetness
Northwood, wooded-----	4	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
Chilgren-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
563:						
Northwood-----	90	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
Grygla-----	4	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
Berner-----	3	Severe: percs slowly ponding poor filter	Severe: excess humus seepage ponding	Severe: excess humus ponding	Severe: seepage ponding	Poor: excess humus ponding
Strandquist-----	3	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: wetness	Poor: wetness
565:						
Eckvoll-----	85	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
565:						
Chilgren-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Grygla-----	5	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
Hiwood-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
568:						
Zippel-----	85	Severe: wetness	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: wetness
Augsburg, depressional-	5	Severe: percs slowly ponding	Severe: seepage ponding	Severe: too clayey ponding	Severe: seepage ponding	Poor: hard to pack too clayey ponding
Sago-----	5	Severe: ponding	Severe: excess humus seepage ponding	Severe: too sandy ponding	Severe: ponding	Poor: too sandy ponding
Skime-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
569:						
Wabanica-----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Warroad-----	6	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
Sax-----	4	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: ponding	Poor: ponding
Grano-----	3	Severe: percs slowly wetness	Slight	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
Enstrom-----	2	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
570:						
Faunce-----	85	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Clearriver-----	7	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Zimmerman-----	4	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy
Meehan-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Pits, gravel-----	1	---	---	---	---	---
581:						
Percy-----	90	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Haug-----	5	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: ponding	Poor: ponding
Boash-----	3	Severe: percs slowly wetness	Moderate: seepage	Severe: wetness	Severe: wetness	Poor: wetness
Skagen-----	2	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: seepage wetness	Fair: wetness
582:						
Roliss-----	85	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Roliss, depressional---	7	Severe: percs slowly ponding	Severe: ponding	Severe: ponding	Severe: ponding	Poor: ponding
Boash-----	5	Severe: percs slowly wetness	Moderate: seepage	Severe: wetness	Severe: wetness	Poor: wetness
Haug-----	3	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: ponding	Poor: ponding
583:						
Nereson-----	85	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: seepage wetness	Fair: small stones wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
583:						
Percy-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Pelan-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: wetness
Foxhome-----	2	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
627:						
Tawas-----	90	Severe: percs slowly wetness subsides	Severe: excess humus seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Leafriver-----	4	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Lupton-----	4	Severe: percs slowly wetness subsides	Severe: excess humus seepage wetness	Severe: excess humus seepage wetness	Severe: seepage wetness	Poor: excess humus wetness
Cormant-----	2	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
630:						
Wildwood-----	90	Severe: percs slowly ponding	Severe: excess humus ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding
Boash-----	4	Severe: percs slowly wetness	Moderate: seepage	Severe: wetness	Severe: wetness	Poor: wetness
Dora-----	4	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: too clayey ponding	Severe: seepage ponding	Poor: hard to pack too clayey ponding
Espelie-----	2	Severe: percs slowly wetness	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey wetness
643:						
Huot-----	85	Severe: percs slowly wetness poor filter	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
643: Thiefriver-----	12	Severe: percs slowly wetness poor filter	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey wetness
Redby-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
644: Boash-----	85	Severe: percs slowly wetness	Moderate: seepage	Severe: wetness	Severe: wetness	Poor: wetness
Percy-----	7	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Woodslake-----	5	Severe: percs slowly ponding	Severe: ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding
Strandquist-----	3	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: wetness	Poor: wetness
645: Espelie-----	85	Severe: percs slowly wetness	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey wetness
Grano-----	5	Severe: percs slowly wetness	Slight	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
Hilaire-----	5	Severe: percs slowly wetness poor filter	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey
Wildwood-----	5	Severe: percs slowly ponding	Severe: excess humus ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding
651: Thiefriver-----	85	Severe: percs slowly wetness poor filter	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey wetness
Grano-----	5	Severe: percs slowly wetness	Slight	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
651:						
Huot-----	5	Severe: percs slowly wetness poor filter	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey
Wildwood-----	5	Severe: percs slowly ponding	Severe: excess humus ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding
708:						
Rushlake-----	85	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy
Corliss-----	6	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Redby-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Hangaard-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Pits, gravel-----	1	---	---	---	---	---
712:						
Rosewood-----	85	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Deerwood-----	6	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Hangaard-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Ulen-----	4	Severe: wetness poor filter	Severe: seepage wetness	Severe: too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
721B:						
Corliss-----	85	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
721B:						
Rushlake-----	10	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy
Hangaard-----	4	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Pits, gravel-----	1	---	---	---	---	---
733:						
Berner-----	90	Severe: percs slowly ponding poor filter	Severe: excess humus seepage ponding	Severe: excess humus ponding	Severe: seepage ponding	Poor: excess humus ponding
Grygla-----	5	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
Seelyeville-----	5	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
737:						
Mahkonce-----	85	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Fair: too clayey wetness
Auganaush-----	10	Severe: percs slowly wetness	Severe: wetness	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
Eckvoll-----	5	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
755:						
Woodslake-----	85	Severe: percs slowly ponding	Severe: ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding
Boash-----	8	Severe: percs slowly wetness	Moderate: seepage	Severe: wetness	Severe: wetness	Poor: wetness
Wildwood-----	5	Severe: percs slowly ponding	Severe: excess humus ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding
Dora-----	2	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: too clayey ponding	Severe: seepage ponding	Poor: hard to pack too clayey ponding

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
767:						
Auganaush-----	90	Severe: percs slowly wetness	Severe: wetness	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
Mustinka-----	5	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: hard to pack wetness
Wildwood-----	3	Severe: percs slowly ponding	Severe: excess humus ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding
Mahkonce-----	2	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Fair: too clayey wetness
794:						
Clearriver-----	85	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Hiwood-----	7	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Meehan-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Faunce-----	3	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
1002:						
Fluvaquents, frequently flooded-----	90	Severe: flooding ponding poor filter	Severe: flooding seepage ponding	Severe: flooding seepage ponding	Severe: flooding seepage ponding	Poor: seepage ponding
Seelyeville-----	6	Severe: percs slowly ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
Hapludalfs-----	2	Severe: percs slowly slope wetness	Severe: seepage slope wetness	Severe: seepage slope wetness	Severe: seepage slope wetness	Poor: slope
Water-----	2	---	---	---	---	---

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1030:						
Pits, gravel-----	75	---	---	---	---	---
Udipsamments-----	20	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope too sandy	Severe: seepage slope	Poor: seepage slope too sandy
Corliss-----	2	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Karlstad-----	2	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy
Hangaard-----	1	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
1031:						
Seelyeville, ponded----	90	Severe: percs slowly ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
Cathro-----	4	Severe: percs slowly ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
Dora-----	3	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: too clayey ponding	Severe: seepage ponding	Poor: hard to pack too clayey ponding
Markey-----	3	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
1067:						
Fluvaquents, frequently flooded-----	60	Severe: flooding ponding poor filter	Severe: flooding seepage ponding	Severe: flooding seepage ponding	Severe: flooding seepage ponding	Poor: seepage ponding
Hapludalfs-----	30	Severe: percs slowly slope wetness	Severe: seepage slope wetness	Severe: seepage slope wetness	Severe: seepage slope wetness	Poor: slope
Seelyeville-----	5	Severe: percs slowly ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
Water-----	5	---	---	---	---	---

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1133B: Skime-----	85	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Hiwood-----	10	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Zippel-----	5	Severe: wetness	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: wetness
1134: Borup-----	55	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: wetness
Glyndon-----	35	Severe: wetness	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Fair: too sandy wetness
Augsburg, depressional-	5	Severe: percs slowly ponding	Severe: seepage ponding	Severe: too clayey ponding	Severe: seepage ponding	Poor: hard to pack too clayey ponding
Skime-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
1144: Strathcona, depressional-----	45	Severe: percs slowly ponding poor filter	Severe: seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
Kratka, depressional---	45	Severe: percs slowly ponding poor filter	Severe: seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
Kratka-----	5	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
Northwood-----	5	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1154:						
Sax-----	90	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: ponding	Poor: ponding
Wabanica-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Cathro-----	3	Severe: percs slowly ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
Woodslake-----	2	Severe: percs slowly ponding	Severe: ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding
1158:						
Skagen-----	85	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: seepage wetness	Fair: wetness
Percy-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Foxhome-----	5	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
1170:						
Skagen, very cobbly----	85	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: seepage wetness	Fair: wetness
Percy, very cobbly----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Foxhome-----	5	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
1179B:						
Moranville-----	85	Severe: percs slowly wetness	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
Baudette-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Fair: wetness
Hiwood-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Spooner-----	5	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: wetness	Poor: wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1181:						
Rosewood-----	50	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Ulen-----	40	Severe: wetness poor filter	Severe: seepage wetness	Severe: too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Redby-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Deerwood-----	3	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Syrene-----	2	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
1182:						
Warroad-----	85	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
Wabanica-----	7	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Enstrom-----	5	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
Sax-----	3	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: ponding	Poor: ponding
1187:						
Dora, ponded-----	90	Severe: percs slowly ponding	Severe: excess humus seepage ponding	Severe: too clayey ponding	Severe: seepage ponding	Poor: hard to pack too clayey ponding
Seelyeville, ponded----	4	Severe: percs slowly ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
Wildwood-----	4	Severe: percs slowly ponding	Severe: excess humus ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding
Boash-----	2	Severe: percs slowly wetness	Moderate: seepage	Severe: wetness	Severe: wetness	Poor: wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1191: Sahkahtay-----	85	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy
Cormant-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Deerwood-----	5	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Karlstad-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy
Redby-----	2	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
1206: Cormant-----	55	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Redby-----	35	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Hiwood-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Leafriver-----	5	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
1214: Mustinka-----	90	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: hard to pack wetness
Espelie-----	4	Severe: percs slowly wetness	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey wetness
Wildwood-----	4	Severe: percs slowly ponding	Severe: excess humus ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1214: Dalbo-----	2	Severe: percs slowly wetness	Severe: wetness	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey
1274B: Redby-----	40	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Hiwood-----	30	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Leafriver, wooded-----	15	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Clearriver-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Cormant-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Zimmerman-----	5	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy
1298: Borup-----	90	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: wetness
Augsburg, depressional-	3	Severe: percs slowly ponding	Severe: seepage ponding	Severe: too clayey ponding	Severe: seepage ponding	Poor: hard to pack too clayey ponding
Glyndon-----	3	Severe: wetness	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Fair: too sandy wetness
Sago-----	2	Severe: ponding	Severe: excess humus seepage ponding	Severe: too sandy ponding	Severe: ponding	Poor: too sandy ponding
Skime-----	2	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1302: Foldahl-----	85	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: small stones too clayey wetness
Kratka-----	10	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
Foxhome-----	5	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
1304: Glyndon-----	85	Severe: wetness	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Fair: too sandy wetness
Borup-----	10	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: wetness
Skime-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
1305: Hilaire-----	85	Severe: percs slowly wetness poor filter	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey
Espelie-----	11	Severe: percs slowly wetness	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey wetness
Grano-----	2	Severe: percs slowly wetness	Slight	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
Redby-----	2	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
1314: Tacoosh-----	90	Severe: percs slowly ponding	Severe: excess humus seepage ponding	Severe: excess humus ponding	Severe: seepage ponding	Poor: excess humus ponding
Rifle-----	8	Severe: ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1314: Sax-----	2	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: ponding	Poor: ponding
1316: Wheatville-----	85	Severe: percs slowly wetness	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey
Augsburg-----	13	Severe: percs slowly wetness	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey wetness
Grano-----	2	Severe: percs slowly wetness	Slight	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
1326: Augsburg, depressional-	45	Severe: percs slowly ponding	Severe: seepage ponding	Severe: too clayey ponding	Severe: seepage ponding	Poor: hard to pack too clayey ponding
Wabanica, depressional-	45	Severe: percs slowly ponding	Severe: ponding	Severe: ponding	Severe: ponding	Poor: ponding
Sax-----	6	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: ponding	Poor: ponding
Espelie-----	2	Severe: percs slowly wetness	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey wetness
Zippel-----	2	Severe: wetness	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: wetness
1327B: Karlstad-----	65	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy
Marquette-----	25	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Sahkahtay-----	7	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1327B: Redby-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
1328: Northwood, wooded-----	90	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
Berner, wooded-----	5	Severe: percs slowly ponding poor filter	Severe: excess humus seepage ponding	Severe: excess humus ponding	Severe: seepage ponding	Poor: excess humus ponding
Grygla-----	5	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
1333: Dora, wooded-----	90	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: too clayey ponding	Severe: seepage ponding	Poor: hard to pack too clayey ponding
Lupton-----	4	Severe: percs slowly wetness subsides	Severe: excess humus seepage wetness	Severe: excess humus seepage wetness	Severe: seepage wetness	Poor: excess humus wetness
Wildwood-----	4	Severe: percs slowly ponding	Severe: excess humus ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding
Auganaush-----	2	Severe: percs slowly wetness	Severe: wetness	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
1356: Water, miscellaneous.						
1399B: Two Inlets-----	85	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Wurtsmith-----	6	Severe: wetness poor filter	Severe: seepage	Severe: seepage too sandy wetness	Severe: seepage	Poor: seepage too sandy
Zimmerman-----	6	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1399B: Meehan-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
1401: Grygla, depressiona---	90	Severe: percs slowly ponding poor filter	Severe: seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
Northwood, wooded-----	5	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding
Chilgren-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Grygla-----	2	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
1402: Leafriver, wooded-----	90	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Cormant-----	4	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Tawas-----	4	Severe: percs slowly wetness subsides	Severe: excess humus seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Redby-----	2	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
1404: Bernier, wooded-----	90	Severe: percs slowly ponding poor filter	Severe: excess humus seepage ponding	Severe: excess humus ponding	Severe: seepage ponding	Poor: excess humus ponding
Lupton-----	4	Severe: percs slowly wetness subsides	Severe: excess humus seepage wetness	Severe: excess humus seepage wetness	Severe: seepage wetness	Poor: excess humus wetness
Northwood, wooded-----	4	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1404: Grygla-----	2	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: wetness
1405: Lallie-----	90	Severe: percs slowly ponding	Severe: ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding
Sax-----	7	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: ponding	Poor: ponding
Wabanica-----	3	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
1414: Nereson, very cobbly---	85	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: seepage wetness	Fair: small stones wetness
Percy, very cobbly----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Pelan-----	3	Severe: wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: wetness
Foxhome-----	2	Severe: wetness	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness
1428: Karlsruhe-----	85	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Syrene-----	10	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Ulen-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
1444: Wurtsmith-----	85	Severe: wetness poor filter	Severe: seepage	Severe: seepage too sandy wetness	Severe: seepage	Poor: seepage too sandy
Meehan-----	10	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1444: Clearriver-----	2	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Two Inlets-----	2	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Cormant-----	1	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
1448: Grano-----	90	Severe: percs slowly wetness	Slight	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Augsburg-----	3	Severe: percs slowly wetness	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey wetness
Woodslake-----	2	Severe: percs slowly ponding	Severe: ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding
1449: Grano-----	90	Severe: percs slowly wetness	Slight	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
Percy-----	5	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Augsburg-----	3	Severe: percs slowly wetness	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey wetness
Woodslake-----	2	Severe: percs slowly ponding	Severe: ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding
1807: Cathro, ponded-----	90	Severe: percs slowly ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: seepage ponding	Poor: ponding

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1807: Haug-----	4	Severe: ponding	Severe: excess humus seepage ponding	Severe: ponding	Severe: ponding	Poor: ponding
Seelyeville, ponded----	4	Severe: percs slowly ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
Percy-----	2	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
1808: Markey, ponded-----	90	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Leafriver-----	4	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Seelyeville, ponded----	4	Severe: percs slowly ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
Cormant-----	2	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
1918: Croke-----	85	Severe: percs slowly wetness	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey
Augsburg-----	13	Severe: percs slowly wetness	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey wetness
Grano-----	2	Severe: percs slowly wetness	Slight	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
1923B: Garnes, very stony----	85	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Fair: small stones wetness
Chilgren-----	10	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Eckvoll-----	3	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: too clayey wetness

Table 20.--Sanitary Facilities--Continued

Map symbol and component name	Percent of map unit	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1923B: Pelan-----	2	Severe: wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Fair: wetness
1984: Leafriver-----	90	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Cormant-----	5	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Markey-----	3	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Redby-----	2	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
W: Water.						

Table 21.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
47:					
Colvin-----	85	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Bearden-----	5	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Good
Grano-----	5	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Sax-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
48B:					
Hiwood-----	85	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Redby-----	7	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Clearriver-----	3	Fair: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy
Cormant-----	3	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Zimmerman-----	2	Good	Probable	Improbable: too sandy	Poor: too sandy
52:					
Augsburg-----	85	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Croke-----	5	Poor: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: thin layer too sandy
Grano-----	5	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Sago-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
59: Grimstad-----	85	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Strathcona-----	12	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Foxhome-----	3	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones
64: Ulen-----	85	Fair: wetness	Improbable: thin layer	Improbable: too sandy	Poor: too sandy
Rosewood-----	10	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Redby-----	3	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Rushlake-----	2	Fair: wetness	Probable	Probable	Poor: area reclaim small stones too sandy
65: Foxhome-----	85	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Strandquist-----	12	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
Skagen-----	3	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones
67: Bearden-----	85	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Good
Colvin-----	15	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
77: Garnes-----	85	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Chilgren-----	10	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
Eckvoll-----	3	Fair: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Pelan-----	2	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones too sandy

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
111: Hangaard-----	90	Poor: wetness	Probable	Probable	Poor: small stones too sandy wetness
Deerwood-----	5	Poor: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy wetness
Rushlake-----	3	Fair: wetness	Probable	Probable	Poor: area reclaim small stones too sandy
Rosewood-----	2	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
116: Redby-----	85	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Cormant-----	8	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Hiwood-----	6	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Leafriver-----	1	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
117: Cormant-----	85	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Leafriver-----	7	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Epoufette-----	3	Poor: wetness	Probable	Probable	Poor: area reclaim small stones too sandy
Redby-----	3	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Grygla, depressional---	2	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
133: Dalbo-----	85	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Mustinka-----	10	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
133: Moranville-----	5	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
145: Enstrom-----	85	Fair: shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Grygla-----	10	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
Redby-----	4	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Pelan-----	1	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones too sandy
147: Spooner-----	85	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Baudette-----	5	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Grygla-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
Sago-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
158B: Zimmerman-----	85	Good	Probable	Improbable: too sandy	Poor: too sandy
Hiwood-----	6	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Two Inlets-----	6	Good	Probable	Probable	Poor: area reclaim small stones too sandy
Redby-----	3	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
167B: Baudette-----	85	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Spooner-----	10	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Moranville-----	5	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
187: Haug-----	90	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
187:					
Percy-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Cathro-----	3	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Boash-----	2	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
191:					
Epoufette-----	85	Poor: wetness	Probable	Probable	Poor: area reclaim small stones too sandy
Cormant-----	5	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Leafriver-----	5	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Meehan-----	5	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy too acid
202:					
Meehan-----	85	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy too acid
Cormant-----	8	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Wurtsmith-----	5	Good	Probable	Improbable: too sandy	Poor: too sandy
Leafriver-----	2	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
205:					
Karlstad-----	85	Fair: wetness	Probable	Probable	Poor: area reclaim small stones too sandy
Sahkahtay-----	7	Poor: wetness	Probable	Probable	Poor: area reclaim small stones too sandy
Marquette-----	5	Good	Probable	Probable	Poor: area reclaim small stones too sandy

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
205: Redby-----	2	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Pits, gravel-----	1	---	---	---	---
242B: Marquette-----	85	Good	Probable	Probable	Poor: area reclaim small stones too sandy
Karlstad-----	14	Fair: wetness	Probable	Probable	Poor: area reclaim small stones too sandy
Pits, gravel-----	1	---	---	---	---
280: Pelan-----	85	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones too sandy
Strandquist-----	10	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
Garnes-----	3	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Marquette-----	1	Good	Probable	Probable	Poor: area reclaim small stones too sandy
Pits, gravel-----	1	---	---	---	---
379: Percy, very cobbly-----	90	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Boash-----	3	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Strandquist-----	3	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
Haug-----	2	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Skagen, very cobbly-----	2	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones
383: Percy-----	90	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Boash-----	3	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
383: Strandquist-----	3	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
Haug-----	2	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Skagen-----	2	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones
384: Percy, depressional----	85	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Haug-----	7	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Percy-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Boash-----	3	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
387: Roliss, depressional----	85	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Haug-----	10	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Roliss-----	5	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
404: Chilgren-----	85	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
Garnes-----	5	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Grygla-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
Haug-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
412: Mavie-----	85	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones too sandy wetness
Foxhome-----	5	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Northwood-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
412: Percy, very cobbly-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
432: Strandquist-----	85	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
Percy, very cobbly-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Haug-----	4	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Boash-----	3	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Foxhome-----	3	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones
433: Syrene, depressional----	85	Poor: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy wetness
Deerwood-----	5	Poor: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy wetness
Rosewood-----	5	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Syrene-----	5	Poor: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy wetness
435: Syrene-----	85	Poor: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy wetness
Rosewood-----	5	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Syrene, depressional----	5	Poor: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy wetness
Karlsruhe-----	3	Fair: wetness	Probable	Probable	Poor: small stones
Deerwood-----	2	Poor: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
439:					
Strathcona-----	85	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Northwood-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Percy-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Grimstad-----	3	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Strandquist-----	2	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
481:					
Kratka-----	85	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Northwood-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Percy-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Enstrom-----	3	Fair: shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Strandquist-----	2	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
482:					
Grygla-----	85	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
Chilgren-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
Grygla, depressional----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
Enstrom-----	3	Fair: shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Northwood-----	2	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
532: Sago-----	90	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
Cathro-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Zippel-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
534: Mooselake-----	90	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Bullwinkle-----	4	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Dora-----	3	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: excess humus wetness
Tawas-----	3	Poor: wetness	Probable	Improbable: too sandy	Poor: excess humus wetness
540: Seelyeville-----	90	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Cathro-----	4	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Dora-----	3	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: excess humus wetness
Markey-----	3	Poor: wetness	Probable	Improbable: too sandy	Poor: excess humus wetness
541: Rifle-----	90	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Tacoosh-----	10	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
543: Markey-----	90	Poor: wetness	Probable	Improbable: too sandy	Poor: excess humus wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
543: Cormant-----	5	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Seelyeville-----	5	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
544: Cathro-----	90	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Percy, very cobbly-----	4	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Grygla-----	3	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
Seelyeville-----	3	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
546: Lupton-----	90	Poor: low strength wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Bullwinkle-----	4	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Dora-----	3	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: excess humus wetness
Tawas-----	3	Poor: wetness	Probable	Improbable: too sandy	Poor: excess humus wetness
547: Deerwood-----	90	Poor: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy wetness
Markey-----	4	Poor: wetness	Probable	Improbable: too sandy	Poor: excess humus wetness
Rosewood-----	3	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Syrene-----	3	Poor: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
550:					
Dora-----	90	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: excess humus wetness
Boash-----	4	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Seelyeville-----	3	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Woodslake-----	3	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
561:					
Bullwinkle-----	90	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Lupton-----	4	Poor: low strength wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Northwood, wooded-----	4	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Chilgren-----	2	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
563:					
Northwood-----	90	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Grygla-----	4	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
Berner-----	3	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Strandquist-----	3	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
565:					
Eckvoll-----	85	Fair: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Chilgren-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
565: Grygla-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
Hiwood-----	5	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
568: Zippel-----	85	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
Augsburg, depression--	5	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Sago-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
Skime-----	5	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
569: Wabanica-----	85	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Warroad-----	6	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
Sax-----	4	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Grano-----	3	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Enstrom-----	2	Fair: shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
570: Faunce-----	85	Good	Probable	Improbable: too sandy	Poor: area reclaim small stones too sandy
Clearriver-----	7	Fair: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy
Zimmerman-----	4	Good	Probable	Improbable: too sandy	Poor: too sandy
Meehan-----	3	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy too acid
Pits, gravel-----	1	---	---	---	---

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
581:					
Percy-----	90	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Haug-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Boash-----	3	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Skagen-----	2	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones
582:					
Roliss-----	85	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Roliss, depressiona-----	7	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Boash-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Haug-----	3	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
583:					
Nereson-----	85	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Percy-----	10	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Pelan-----	3	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones too sandy
Foxhome-----	2	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones
627:					
Tawas-----	90	Poor: wetness	Probable	Improbable: too sandy	Poor: excess humus wetness
Leafriver-----	4	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Lupton-----	4	Poor: low strength wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Cormant-----	2	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
630: Wildwood-----	90	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Boash-----	4	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Dora-----	4	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: excess humus wetness
Espelie-----	2	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones too clayey wetness
643: Huot-----	85	Poor: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: small stones thin layer
Thiefriver-----	12	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Redby-----	3	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
644: Boash-----	85	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Percy-----	7	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Woodslake-----	5	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Strandquist-----	3	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
645: Espelie-----	85	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones too clayey wetness
Grano-----	5	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Hilaire-----	5	Poor: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: small stones too sandy

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
645: Wildwood-----	5	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
651: Thiefriever-----	85	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Grano-----	5	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Huot-----	5	Poor: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: small stones thin layer
Wildwood-----	5	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
708: Rushlake-----	85	Fair: wetness	Probable	Probable	Poor: area reclaim small stones too sandy
Corliss-----	6	Good	Probable	Improbable: thin layer	Poor: area reclaim small stones too sandy
Redby-----	5	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Hangaard-----	3	Poor: wetness	Probable	Probable	Poor: small stones too sandy wetness
Pits, gravel-----	1	---	---	---	---
712: Rosewood-----	85	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Deerwood-----	6	Poor: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy wetness
Hangaard-----	5	Poor: wetness	Probable	Probable	Poor: small stones too sandy wetness
Ulen-----	4	Fair: wetness	Improbable: thin layer	Improbable: too sandy	Poor: too sandy

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
721B:					
Corliss-----	85	Good	Probable	Improbable: thin layer	Poor: area reclaim small stones too sandy
Rushlake-----	10	Fair: wetness	Probable	Probable	Poor: area reclaim small stones too sandy
Hangaard-----	4	Poor: wetness	Probable	Probable	Poor: small stones too sandy wetness
Pits, gravel-----	1	---	---	---	---
733:					
Berner-----	90	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Grygla-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
Seelyeville-----	5	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
737:					
Mahkonce-----	85	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Auganaush-----	10	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Eckvoll-----	5	Fair: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
755:					
Woodslake-----	85	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Boash-----	8	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Wildwood-----	5	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Dora-----	2	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: excess humus wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
767:					
Auganaush-----	90	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Mustinka-----	5	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Wildwood-----	3	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Mahkonce-----	2	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
794:					
Clearriver-----	85	Fair: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy
Hiwood-----	7	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Meehan-----	5	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy too acid
Faunce-----	3	Good	Probable	Improbable: too sandy	Poor: area reclaim small stones too sandy
1002:					
Fluvaquents, frequently flooded-----	90	Poor: wetness	Probable	Improbable: too sandy	Poor: wetness
Seelyeville-----	6	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Hapludalfs-----	2	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope thin layer
Water-----	2	---	---	---	---
1030:					
Pits, gravel-----	75	---	---	---	---
Udipsamments-----	20	Poor: slope	Probable	Probable	Poor: slope too sandy
Corliss-----	2	Good	Probable	Improbable: thin layer	Poor: area reclaim small stones too sandy

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
1030: Karlstad-----	2	Fair: wetness	Probable	Probable	Poor: area reclaim small stones too sandy
Hangaard-----	1	Poor: wetness	Probable	Probable	Poor: small stones too sandy wetness
1031: Seelyeville, ponded-----	90	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Cathro-----	4	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Dora-----	3	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: excess humus wetness
Markey-----	3	Poor: wetness	Probable	Improbable: too sandy	Poor: excess humus wetness
1067: Fluvaquents, frequently flooded-----	60	Poor: wetness	Probable	Improbable: too sandy	Poor: wetness
Hapludalfs-----	30	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope thin layer
Seelyeville-----	5	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Water-----	5	---	---	---	---
1133B: Skime-----	85	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Hiwood-----	10	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Zippel-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
1134: Borup-----	55	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Glyndon-----	35	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: thin layer

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
1134: Augsburg, depressional--	5	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Skime-----	5	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
1144: Strathcona, depressional	45	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
Kratka, depressional----	45	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Kratka-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Northwood-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
1154: Sax-----	90	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Wabanica-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Cathro-----	3	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Woodslake-----	2	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
1158: Skagen-----	85	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones
Percy-----	10	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Foxhome-----	5	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones
1170: Skagen, very cobbly----	85	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones
Percy, very cobbly----	10	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Foxhome-----	5	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
1179B:					
Moranville-----	85	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Baudette-----	5	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Hiwood-----	5	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Spooner-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
1181:					
Rosewood-----	50	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Ulen-----	40	Fair: wetness	Improbable: thin layer	Improbable: too sandy	Poor: too sandy
Redby-----	5	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Deerwood-----	3	Poor: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy wetness
Syrene-----	2	Poor: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy wetness
1182:					
Warroad-----	85	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
Wabanica-----	7	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Enstrom-----	5	Fair: shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Sax-----	3	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
1187:					
Dora, ponded-----	90	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: excess humus wetness
Seelyeville, ponded----	4	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Wildwood-----	4	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
1187: Boash-----	2	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
1191: Sahkahtay-----	85	Poor: wetness	Probable	Probable	Poor: area reclaim small stones too sandy
Cormant-----	5	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Deerwood-----	5	Poor: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy wetness
Karlstad-----	3	Fair: wetness	Probable	Probable	Poor: area reclaim small stones too sandy
Redby-----	2	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
1206: Cormant-----	55	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Redby-----	35	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Hiwood-----	5	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Leafriver-----	5	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
1214: Mustinka-----	90	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Espelie-----	4	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones too clayey wetness
Wildwood-----	4	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Dalbo-----	2	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
1274B:					
Redby-----	40	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Hiwood-----	30	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
Leafriver, wooded-----	15	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Clearriver-----	5	Fair: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy
Cormant-----	5	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Zimmerman-----	5	Good	Probable	Improbable: too sandy	Poor: too sandy
1298:					
Borup-----	90	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Augsburg, depressional--	3	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Glyndon-----	3	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: thin layer
Sago-----	2	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
Skime-----	2	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
1302:					
Foldahl-----	85	Fair: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Kratka-----	10	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Foxhome-----	5	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones
1304:					
Glyndon-----	85	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: thin layer
Borup-----	10	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Skime-----	5	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
1305:					
Hilaire-----	85	Poor: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: small stones too sandy
Espelie-----	11	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones too clayey wetness
Grano-----	2	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Redby-----	2	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
1314:					
Tacoosh-----	90	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Rifle-----	8	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Sax-----	2	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
1316:					
Wheatville-----	85	Poor: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: thin layer too sandy
Augsburg-----	13	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Grano-----	2	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
1326:					
Augsburg, depressional--	45	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Wabanica, depressional--	45	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Sax-----	6	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Espelie-----	2	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones too clayey wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
1326: Zippel-----	2	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
1327B: Karlstad-----	65	Fair: wetness	Probable	Probable	Poor: area reclaim small stones too sandy
Marquette-----	25	Good	Probable	Probable	Poor: area reclaim small stones too sandy
Sahkahtay-----	7	Poor: wetness	Probable	Probable	Poor: area reclaim small stones too sandy
Redby-----	3	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
1328: Northwood, wooded-----	90	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Berner, wooded-----	5	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Grygla-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
1333: Dora, wooded-----	90	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: excess humus wetness
Lupton-----	4	Poor: low strength wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Wildwood-----	4	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Auganaush-----	2	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
1356: Water, miscellaneous.					
1399B: Two Inlets-----	85	Good	Probable	Probable	Poor: area reclaim small stones too sandy

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
1399B:					
Wurtsmith-----	6	Good	Probable	Improbable: too sandy	Poor: too sandy
Zimmerman-----	6	Good	Probable	Improbable: too sandy	Poor: too sandy
Meehan-----	3	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy too acid
1401:					
Grygla, depression-----	90	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
Northwood, wooded-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Chilgren-----	3	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
Grygla-----	2	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness
1402:					
Leafriver, wooded-----	90	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Cormant-----	4	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Tawas-----	4	Poor: wetness	Probable	Improbable: too sandy	Poor: excess humus wetness
Redby-----	2	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
1404:					
Berner, wooded-----	90	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Lupton-----	4	Poor: low strength wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Northwood, wooded-----	4	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Grygla-----	2	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
1405:					
Lallie-----	90	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: excess salt too clayey wetness
Sax-----	7	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Wabanica-----	3	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
1414:					
Nereson, very cobbly----	85	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Percy, very cobbly-----	10	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Pelan-----	3	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones too sandy
Foxhome-----	2	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones
1428:					
Karlsruhe-----	85	Fair: wetness	Probable	Probable	Poor: small stones
Syrene-----	10	Poor: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy wetness
Ulen-----	5	Fair: wetness	Improbable: thin layer	Improbable: too sandy	Poor: too sandy
1444:					
Wurtsmith-----	85	Good	Probable	Improbable: too sandy	Poor: too sandy
Meehan-----	10	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy too acid
Clearriver-----	2	Fair: wetness	Probable	Improbable: too sandy	Poor: small stones too sandy
Two Inlets-----	2	Good	Probable	Probable	Poor: area reclaim small stones too sandy
Cormant-----	1	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
1448:					
Grano-----	90	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
1448:					
Percy-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Augsburg-----	3	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Woodslake-----	2	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
1449:					
Grano-----	90	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Percy-----	5	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Augsburg-----	3	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Woodslake-----	2	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
1807:					
Cathro, ponded-----	90	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Haug-----	4	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Seelyeville, ponded----	4	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Percy-----	2	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
1808:					
Markey, ponded-----	90	Poor: wetness	Probable	Improbable: too sandy	Poor: excess humus wetness
Leafriver-----	4	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Seelyeville, ponded----	4	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
Cormant-----	2	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness

Table 21.--Construction Materials--Continued

Map symbol and component name	Percent of map unit	Roadfill	Sand	Gravel	Topsoil
1918:					
Croke-----	85	Poor: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: thin layer too sandy
Augsburg-----	13	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Grano-----	2	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
1923B:					
Garnes, very stony-----	85	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Chilgren-----	10	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
Eckvoll-----	3	Fair: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Pelan-----	2	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones too sandy
1984:					
Leafriver-----	90	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Cormant-----	5	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Markey-----	3	Poor: wetness	Probable	Improbable: too sandy	Poor: excess humus wetness
Redby-----	2	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy
W: Water.					

Table 22.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
47:								
Colvin-----	85	Moderate: seepage	Severe: wetness	Severe: slow refill	Frost action	Wetness	Wetness	Wetness
Bearden-----	5	Slight	Severe: wetness	Severe: slow refill	Frost action	Wetness	Erodes easily percs slowly wetness	Erodes easily rooting depth
Grano-----	5	Slight	Severe: hard to pack wetness	Severe: slow refill	Frost action percs slowly	Percs slowly slow intake wetness	Percs slowly wetness	Percs slowly wetness
Sax-----	5	Moderate: seepage	Severe: piping ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily wetness
48B:								
Hiwood-----	85	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Slope cutbanks cave	Slope wetness droughty	Too sandy wetness	Droughty
Redby-----	7	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
Clearriver-----	3	Severe: seepage	Severe: seepage	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
Cormant-----	3	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Zimmerman-----	2	Severe: seepage	Severe: seepage piping	Severe: no water	Deep to water	Fast intake slope droughty	Too sandy soil blowing	Droughty

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
52: Augsburg-----	85	Severe: seepage	Severe: hard to pack wetness	Severe: slow refill cutbanks cave	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness	Percs slowly wetness
Croke-----	5	Severe: seepage	Severe: hard to pack	Severe: slow refill cutbanks cave	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness soil blowing	Percs slowly
Grano-----	5	Slight	Severe: hard to pack wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness	Percs slowly wetness
Sago-----	5	Moderate: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
59: Grimstad-----	85	Severe: seepage	Severe: piping wetness	Severe: cutbanks cave	Favorable	Wetness	Erodes easily wetness soil blowing	Erodes easily
Strathcona-----	12	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Frost action	Wetness soil blowing	Wetness soil blowing	Wetness
Foxhome-----	3	Severe: seepage	Severe: piping	Severe: cutbanks cave	Frost action	Wetness soil blowing	Wetness soil blowing	Favorable
64: Ulen-----	85	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Droughty
Rosewood-----	10	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Redby-----	3	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
Rushlake-----	2	Severe: seepage	Severe: seepage	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Droughty

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
65:								
Foxhome-----	85	Severe: seepage	Severe: piping	Severe: cutbanks cave	Frost action	Wetness soil blowing	Wetness soil blowing	Favorable
Strandquist-----	12	Moderate: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action	Wetness	Erodes easily wetness	Erodes easily wetness
Skagen-----	3	Severe: seepage	Severe: piping	Moderate: slow refill deep to water	Frost action	Wetness	Wetness	Favorable
67:								
Bearden-----	85	Slight	Severe: wetness	Severe: slow refill	Frost action	Wetness	Erodes easily percs slowly wetness	Erodes easily rooting depth
Colvin-----	15	Moderate: seepage	Severe: wetness	Severe: slow refill	Frost action	Wetness	Wetness	Wetness
77:								
Garnes-----	85	Moderate: seepage	Severe: piping	Moderate: slow refill deep to water	Frost action	Wetness soil blowing	Wetness soil blowing	Rooting depth
Chilgren-----	10	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Rooting depth wetness soil blowing	Wetness soil blowing	Rooting depth wetness
Eckvoll-----	3	Severe: seepage	Moderate: piping wetness	Severe: slow refill cutbanks cave	Frost action	Fast intake wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily
Pelan-----	2	Severe: seepage	Severe: piping	Moderate: slow refill cutbanks cave deep to water	Favorable	Wetness droughty	Wetness soil blowing	Rooting depth droughty
111:								
Hangaard-----	90	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Wetness droughty

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
111: Deerwood-----	5	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Subsides ponding cutbanks cave	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
Rushlake-----	3	Severe: seepage	Severe: seepage	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Droughty
Rosewood-----	2	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Wetness droughty
116: Redby-----	85	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
Cormant-----	8	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Hiwood-----	6	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Slope cutbanks cave	Slope wetness droughty	Too sandy wetness	Droughty
Leafriver-----	1	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
117: Cormant-----	85	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Leafriver-----	7	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
117:								
Epoufette-----	3	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Frost action cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Redby-----	3	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
Grygla, depressional---	2	Severe: seepage	Severe: piping ponding	Severe: slow refill cutbanks cave	Frost action ponding	Soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily wetness
133:								
Dalbo-----	85	Moderate: seepage	Moderate: hard to pack wetness	Severe: slow refill	Frost action percs slowly	Wetness	Erodes easily wetness	Erodes easily percs slowly
Mustinka-----	10	Slight	Severe: wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Erodes easily wetness	Erodes easily percs slowly wetness
Moranville-----	5	Severe: seepage	Severe: thin layer	Severe: slow refill cutbanks cave	Frost action	Wetness droughty	Erodes easily wetness soil blowing	Erodes easily droughty
145:								
Enstrom-----	85	Severe: seepage	Severe: piping	Severe: slow refill cutbanks cave	Favorable	Wetness droughty	Erodes easily wetness	Erodes easily droughty
Grygla-----	10	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Frost action	Wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily wetness
Redby-----	4	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
Pelan-----	1	Severe: seepage	Severe: piping	Moderate: slow refill cutbanks cave deep to water	Favorable	Wetness droughty	Wetness soil blowing	Rooting depth droughty

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
147:								
Spooner-----	85	Moderate: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action	Erodes easily wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily wetness
Baudette-----	5	Moderate: seepage slope	Severe: piping	Severe: cutbanks cave	Frost action slope cutbanks cave	Slope wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily
Grygla-----	5	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Frost action	Wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily wetness
Sago-----	5	Moderate: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
158B:								
Zimmerman-----	85	Severe: seepage	Severe: seepage piping	Severe: no water	Deep to water	Fast intake slope droughty	Too sandy soil blowing	Droughty
Hiwood-----	6	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Slope cutbanks cave	Slope wetness droughty	Too sandy wetness	Droughty
Two Inlets-----	6	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Fast intake slope droughty	Too sandy soil blowing	Rooting depth droughty
Redby-----	3	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
167B:								
Baudette-----	85	Moderate: seepage slope	Severe: piping	Severe: cutbanks cave	Frost action slope cutbanks cave	Slope wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily
Spooner-----	10	Moderate: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action	Erodes easily wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
167B: Moranville-----	5	Severe: seepage	Severe: thin layer	Severe: slow refill cutbanks cave	Frost action	Wetness droughty	Erodes easily wetness soil blowing	Erodes easily droughty
187: Haug-----	90	Moderate: seepage	Severe: piping ponding	Moderate: slow refill	Frost action ponding	Soil blowing ponding	Soil blowing ponding	Wetness
Percy-----	5	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
Cathro-----	3	Severe: seepage	Severe: piping ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Soil blowing ponding	Wetness
Boash-----	2	Moderate: seepage	Severe: piping wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Wetness	Percs slowly wetness
191: Epoufette-----	85	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Frost action cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Cormant-----	5	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Leafriver-----	5	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
Meehan-----	5	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Too acid cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
202: Meehan-----	85	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Too acid cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
202:								
Cormant-----	8	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Wurtsmith-----	5	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Deep to water	Fast intake droughty	Too sandy soil blowing	Droughty
Leafriver-----	2	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
205:								
Karlstad-----	85	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Large stones too sandy wetness	Large stones droughty
Sahkahtay-----	7	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Marquette-----	5	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Fast intake slope droughty	Too sandy soil blowing	Droughty
Redby-----	2	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
Pits, gravel-----	1	---	---	---	---	---	---	---
242B:								
Marquette-----	85	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Fast intake slope droughty	Too sandy soil blowing	Droughty
Karlstad-----	14	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Large stones too sandy wetness	Large stones droughty
Pits, gravel-----	1	---	---	---	---	---	---	---

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
280:								
Pelan-----	85	Severe: seepage	Severe: piping	Moderate: slow refill cutbanks cave deep to water	Favorable	Wetness droughty	Wetness soil blowing	Rooting depth droughty
Strandquist-----	10	Moderate: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action	Wetness	Erodes easily wetness	Erodes easily wetness
Garnes-----	3	Moderate: seepage	Severe: piping	Moderate: slow refill deep to water	Frost action	Wetness soil blowing	Wetness soil blowing	Rooting depth
Marquette-----	1	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Fast intake slope droughty	Too sandy soil blowing	Droughty
Pits, gravel-----	1	---	---	---	---	---	---	---
379:								
Percy, very cobbly----	90	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
Boash-----	3	Moderate: seepage	Severe: piping wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Wetness	Percs slowly wetness
Strandquist-----	3	Moderate: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action	Wetness	Erodes easily wetness	Erodes easily wetness
Haug-----	2	Moderate: seepage	Severe: piping ponding	Moderate: slow refill	Frost action ponding	Soil blowing ponding	Soil blowing ponding	Wetness
Skagen, very cobbly----	2	Severe: seepage	Severe: piping	Moderate: slow refill deep to water	Frost action	Wetness	Wetness	Favorable
383:								
Percy-----	90	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
383:								
Boash-----	3	Moderate: seepage	Severe: piping wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Wetness	Percs slowly wetness
Strandquist-----	3	Moderate: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action	Wetness	Erodes easily wetness	Erodes easily wetness
Haug-----	2	Moderate: seepage	Severe: piping ponding	Moderate: slow refill	Frost action ponding	Soil blowing ponding	Soil blowing ponding	Wetness
Skagen-----	2	Severe: seepage	Severe: piping	Moderate: slow refill deep to water	Frost action	Wetness	Wetness	Favorable
384:								
Percy, depressional----	85	Moderate: seepage	Severe: piping ponding	Moderate: slow refill	Frost action ponding	Ponding	Ponding	Wetness
Haug-----	7	Moderate: seepage	Severe: piping ponding	Moderate: slow refill	Frost action ponding	Soil blowing ponding	Soil blowing ponding	Wetness
Percy-----	5	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
Boash-----	3	Moderate: seepage	Severe: piping wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Wetness	Percs slowly wetness
387:								
Roliss, depressional---	85	Moderate: seepage	Severe: piping ponding	Severe: slow refill	Frost action ponding	Ponding	Ponding	Wetness
Haug-----	10	Moderate: seepage	Severe: piping ponding	Moderate: slow refill	Frost action ponding	Soil blowing ponding	Soil blowing ponding	Wetness
Roliss-----	5	Moderate: seepage	Severe: piping wetness	Severe: slow refill	Frost action	Wetness	Wetness	Wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
404:								
Chilgren-----	85	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Rooting depth wetness soil blowing	Wetness soil blowing	Rooting depth wetness
Garnes-----	5	Moderate: seepage	Severe: piping	Moderate: slow refill deep to water	Frost action	Wetness soil blowing	Wetness soil blowing	Rooting depth
Grygla-----	5	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Frost action	Wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily wetness
Haug-----	5	Moderate: seepage	Severe: piping ponding	Moderate: slow refill	Frost action ponding	Soil blowing ponding	Soil blowing ponding	Wetness
412:								
Mavie-----	85	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Frost action	Wetness soil blowing droughty	Erodes easily wetness soil blowing	Erodes easily wetness droughty
Foxhome-----	5	Severe: seepage	Severe: piping	Severe: cutbanks cave	Frost action	Wetness soil blowing	Wetness soil blowing	Favorable
Northwood-----	5	Severe: seepage	Severe: piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Rooting depth soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily rooting depth wetness
Percy, very cobbly----	5	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
432:								
Strandquist-----	85	Moderate: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action	Wetness	Erodes easily wetness	Erodes easily wetness
Percy, very cobbly----	5	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
432:								
Haug-----	4	Moderate: seepage	Severe: piping ponding	Moderate: slow refill	Frost action ponding	Soil blowing ponding	Soil blowing ponding	Wetness
Boash-----	3	Moderate: seepage	Severe: piping wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Wetness	Percs slowly wetness
Foxhome-----	3	Severe: seepage	Severe: piping	Severe: cutbanks cave	Frost action	Wetness soil blowing	Wetness soil blowing	Favorable
433:								
Syrene, depressional---	85	Severe: seepage	Severe: seepage ponding	Severe: cutbanks cave	Ponding cutbanks cave	Soil blowing ponding droughty	Erodes easily too sandy ponding	Erodes easily wetness droughty
Deerwood-----	5	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Subsides ponding cutbanks cave	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
Rosewood-----	5	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Syrene-----	5	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Cutbanks cave	Wetness soil blowing droughty	Erodes easily too sandy wetness	Erodes easily wetness droughty
435:								
Syrene-----	85	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Cutbanks cave	Wetness soil blowing droughty	Erodes easily too sandy wetness	Erodes easily wetness droughty
Rosewood-----	5	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Syrene, depressional---	5	Severe: seepage	Severe: seepage ponding	Severe: cutbanks cave	Ponding cutbanks cave	Soil blowing ponding droughty	Erodes easily too sandy ponding	Erodes easily wetness droughty

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
435: Karlsruhe-----	3	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Cutbanks cave	Wetness soil blowing droughty	Too sandy wetness soil blowing	Droughty
Deerwood-----	2	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Subsides ponding cutbanks cave	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
439: Strathcona-----	85	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Frost action	Wetness soil blowing	Wetness soil blowing	Wetness
Northwood-----	5	Severe: seepage	Severe: piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Rooting depth soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily rooting depth wetness
Percy-----	5	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
Grimstad-----	3	Severe: seepage	Severe: piping wetness	Severe: cutbanks cave	Favorable	Wetness	Erodes easily wetness soil blowing	Erodes easily
Strandquist-----	2	Moderate: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action	Wetness	Erodes easily wetness	Erodes easily wetness
481: Kratka-----	85	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Favorable	Wetness soil blowing droughty	Erodes easily wetness soil blowing	Erodes easily wetness droughty
Northwood-----	5	Severe: seepage	Severe: piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Rooting depth soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily rooting depth wetness
Percy-----	5	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
481: Enstrom-----	3	Severe: seepage	Severe: piping	Severe: slow refill cutbanks cave	Favorable	Wetness droughty	Erodes easily wetness	Erodes easily droughty
Strandquist-----	2	Moderate: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action	Wetness	Erodes easily wetness	Erodes easily wetness
482: Grygla-----	85	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Frost action	Wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily wetness
Chilgren-----	5	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Rooting depth wetness soil blowing	Wetness soil blowing	Rooting depth wetness
Grygla, depressional---	5	Severe: seepage	Severe: piping ponding	Severe: slow refill cutbanks cave	Frost action ponding	Soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily wetness
Enstrom-----	3	Severe: seepage	Severe: piping	Severe: slow refill cutbanks cave	Favorable	Wetness droughty	Erodes easily wetness	Erodes easily droughty
Northwood-----	2	Severe: seepage	Severe: piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Rooting depth soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily rooting depth wetness
532: Sago-----	90	Moderate: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
Cathro-----	5	Severe: seepage	Severe: piping ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Soil blowing ponding	Wetness
Zippel-----	5	Severe: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action cutbanks cave	Wetness	Erodes easily wetness soil blowing	Erodes easily wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
534: Mooselake-----	90	Severe: seepage	Severe: excess humus wetness	Moderate: slow refill	Frost action subsides	Wetness	Wetness	Wetness
Bullwinkle-----	4	Severe: seepage	Severe: excess humus wetness	Severe: slow refill	Frost action subsides	Wetness soil blowing	Wetness soil blowing	Wetness
Dora-----	3	Severe: seepage	Severe: hard to pack ponding	Severe: slow refill	Percs slowly subsides ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness
Tawas-----	3	Severe: seepage	Severe: seepage piping wetness	Severe: slow refill cutbanks cave	Frost action subsides cutbanks cave	Wetness soil blowing	Too sandy wetness soil blowing	Wetness
540: Seelyeville-----	90	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Soil blowing ponding	Wetness
Cathro-----	4	Severe: seepage	Severe: piping ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Soil blowing ponding	Wetness
Dora-----	3	Severe: seepage	Severe: hard to pack ponding	Severe: slow refill	Percs slowly subsides ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness
Markey-----	3	Severe: seepage	Severe: seepage piping ponding	Severe: slow refill cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
541: Rifle-----	90	Severe: seepage	Severe: excess humus ponding	Moderate: slow refill	Frost action ponding	Ponding	Ponding	Wetness
Tacoosh-----	10	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Frost action subsides ponding	Ponding	Ponding	Wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
543:								
Markey-----	90	Severe: seepage	Severe: seepage piping ponding	Severe: slow refill cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
Cormant-----	5	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Seelyeville-----	5	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Soil blowing ponding	Wetness
544:								
Cathro-----	90	Severe: seepage	Severe: piping ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Soil blowing ponding	Wetness
Percy, very cobbly----	4	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
Grygla-----	3	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Frost action	Wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily wetness
Seelyeville-----	3	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Soil blowing ponding	Wetness
546:								
Lupton-----	90	Severe: seepage	Severe: excess humus wetness	Severe: slow refill	Frost action subsides	Wetness soil blowing	Wetness soil blowing	Wetness
Bullwinkle-----	4	Severe: seepage	Severe: excess humus wetness	Severe: slow refill	Frost action subsides	Wetness soil blowing	Wetness soil blowing	Wetness
Dora-----	3	Severe: seepage	Severe: hard to pack ponding	Severe: slow refill	Percs slowly subsides ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
546: Tawas-----	3	Severe: seepage	Severe: seepage piping wetness	Severe: slow refill cutbanks cave	Frost action subsides cutbanks cave	Wetness soil blowing	Too sandy wetness soil blowing	Wetness
547: Deerwood-----	90	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Subsides ponding cutbanks cave	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
Markey-----	4	Severe: seepage	Severe: seepage piping ponding	Severe: slow refill cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
Rosewood-----	3	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Syrene-----	3	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Cutbanks cave	Wetness soil blowing droughty	Erodes easily too sandy wetness	Erodes easily wetness droughty
550: Dora-----	90	Severe: seepage	Severe: hard to pack ponding	Severe: slow refill	Percs slowly subsides ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness
Boash-----	4	Moderate: seepage	Severe: piping wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Wetness	Percs slowly wetness
Seelyeville-----	3	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Soil blowing ponding	Wetness
Woodslake-----	3	Slight	Severe: hard to pack ponding	Severe: slow refill	Percs slowly ponding	Slow intake ponding droughty	Percs slowly ponding	Percs slowly wetness droughty

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
561:								
Bullwinkle-----	90	Severe: seepage	Severe: excess humus wetness	Severe: slow refill	Frost action subsides	Wetness soil blowing	Wetness soil blowing	Wetness
Lupton-----	4	Severe: seepage	Severe: excess humus wetness	Severe: slow refill	Frost action subsides	Wetness soil blowing	Wetness soil blowing	Wetness
Northwood, wooded-----	4	Severe: seepage	Severe: piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Rooting depth soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily rooting depth wetness
Chilgren-----	2	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Rooting depth wetness soil blowing	Wetness soil blowing	Rooting depth wetness
563:								
Northwood-----	90	Severe: seepage	Severe: piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Rooting depth soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily rooting depth wetness
Grygla-----	4	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Frost action	Wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily wetness
Berner-----	3	Severe: seepage	Severe: excess humus ponding	Severe: slow refill cutbanks cave	Frost action subsides ponding	Rooting depth soil blowing ponding	Soil blowing ponding	Rooting depth wetness
Strandquist-----	3	Moderate: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action	Wetness	Erodes easily wetness	Erodes easily wetness
565:								
Eckvoll-----	85	Severe: seepage	Moderate: piping wetness	Severe: slow refill cutbanks cave	Frost action	Fast intake wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily
Chilgren-----	5	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Rooting depth wetness soil blowing	Wetness soil blowing	Rooting depth wetness
Grygla-----	5	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Frost action	Wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
565: Hiwood-----	5	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Slope cutbanks cave	Slope wetness droughty	Too sandy wetness	Droughty
568: Zippel-----	85	Severe: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action cutbanks cave	Wetness	Erodes easily wetness soil blowing	Erodes easily wetness
Augsburg, depressional-	5	Severe: seepage	Severe: hard to pack ponding	Severe: slow refill cutbanks cave	Frost action percs slowly ponding	Percs slowly ponding	Percs slowly ponding	Percs slowly wetness
Sago-----	5	Moderate: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
Skime-----	5	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Droughty
569: Wabanica-----	85	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
Warroad-----	6	Severe: seepage	Severe: wetness	Severe: slow refill cutbanks cave	Frost action	Wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily wetness
Sax-----	4	Moderate: seepage	Severe: piping ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily wetness
Grano-----	3	Slight	Severe: hard to pack wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness	Percs slowly wetness
Enstrom-----	2	Severe: seepage	Severe: piping	Severe: slow refill cutbanks cave	Favorable	Wetness droughty	Erodes easily wetness	Erodes easily droughty

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
570:								
Faunce-----	85	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Fast intake droughty	Too sandy soil blowing	Rooting depth droughty
Clearriver-----	7	Severe: seepage	Severe: seepage	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
Zimmerman-----	4	Severe: seepage	Severe: seepage piping	Severe: no water	Deep to water	Fast intake slope droughty	Too sandy soil blowing	Droughty
Meehan-----	3	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Too acid cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Pits, gravel-----	1	---	---	---	---	---	---	---
581:								
Percy-----	90	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness soil blowing	Wetness soil blowing	Wetness
Haug-----	5	Moderate: seepage	Severe: piping ponding	Moderate: slow refill	Frost action ponding	Soil blowing ponding	Soil blowing ponding	Wetness
Boash-----	3	Moderate: seepage	Severe: piping wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Wetness	Percs slowly wetness
Skagen-----	2	Severe: seepage	Severe: piping	Moderate: slow refill deep to water	Frost action	Wetness	Wetness	Favorable
582:								
Roliss-----	85	Moderate: seepage	Severe: piping wetness	Severe: slow refill	Frost action	Wetness	Wetness	Wetness
Roliss, depressiona---	7	Moderate: seepage	Severe: piping ponding	Severe: slow refill	Frost action ponding	Ponding	Ponding	Wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
582: Boash-----	5	Moderate: seepage	Severe: piping wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Wetness	Percs slowly wetness
Haug-----	3	Moderate: seepage	Severe: piping ponding	Moderate: slow refill	Frost action ponding	Soil blowing ponding	Soil blowing ponding	Wetness
583: Nereson-----	85	Severe: seepage	Severe: seepage piping	Moderate: slow refill deep to water	Frost action	Wetness soil blowing	Wetness soil blowing	Favorable
Percy-----	10	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
Pelan-----	3	Severe: seepage	Severe: piping	Moderate: slow refill cutbanks cave deep to water	Favorable	Wetness droughty	Wetness soil blowing	Rooting depth droughty
Foxhome-----	2	Severe: seepage	Severe: piping	Severe: cutbanks cave	Frost action	Wetness soil blowing	Wetness soil blowing	Favorable
627: Tawas-----	90	Severe: seepage	Severe: seepage piping wetness	Severe: slow refill cutbanks cave	Frost action subsides cutbanks cave	Wetness soil blowing	Too sandy wetness soil blowing	Wetness
Leafriver-----	4	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
Lupton-----	4	Severe: seepage	Severe: excess humus wetness	Severe: slow refill	Frost action subsides	Wetness soil blowing	Wetness soil blowing	Wetness
Cormant-----	2	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
630:								
Wildwood-----	90	Slight	Severe: hard to pack ponding	Severe: slow refill	Frost action percs slowly ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness
Boash-----	4	Moderate: seepage	Severe: piping wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Wetness	Percs slowly wetness
Dora-----	4	Severe: seepage	Severe: hard to pack ponding	Severe: slow refill	Percs slowly subsides ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness
Espelie-----	2	Severe: seepage	Severe: wetness	Severe: slow refill cutbanks cave	Frost action percs slowly	Wetness soil blowing droughty	Percs slowly wetness soil blowing	Percs slowly wetness droughty
643:								
Huot-----	85	Severe: seepage	Severe: hard to pack	Severe: slow refill cutbanks cave	Frost action percs slowly	Wetness droughty	Percs slowly wetness soil blowing	Percs slowly droughty
Thiefriver-----	12	Severe: seepage	Severe: wetness	Severe: slow refill cutbanks cave	Frost action percs slowly	Wetness soil blowing droughty	Percs slowly wetness soil blowing	Percs slowly wetness droughty
Redby-----	3	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
644:								
Boash-----	85	Moderate: seepage	Severe: piping wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Wetness	Percs slowly wetness
Percy-----	7	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
Woodslake-----	5	Slight	Severe: hard to pack ponding	Severe: slow refill	Percs slowly ponding	Slow intake ponding droughty	Percs slowly ponding	Percs slowly wetness droughty
Strandquist-----	3	Moderate: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action	Wetness	Erodes easily wetness	Erodes easily wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
645: Espelie-----	85	Severe: seepage	Severe: wetness	Severe: slow refill cutbanks cave	Frost action percs slowly	Wetness soil blowing droughty	Percs slowly wetness soil blowing	Percs slowly wetness droughty
Grano-----	5	Slight	Severe: hard to pack wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness	Percs slowly wetness
Hilaire-----	5	Severe: seepage	Severe: hard to pack	Severe: slow refill cutbanks cave	Frost action percs slowly	Wetness droughty	Percs slowly wetness soil blowing	Percs slowly droughty
Wildwood-----	5	Slight	Severe: hard to pack ponding	Severe: slow refill	Frost action percs slowly ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness
651: Thiefriver-----	85	Severe: seepage	Severe: wetness	Severe: slow refill cutbanks cave	Frost action percs slowly	Wetness soil blowing droughty	Percs slowly wetness soil blowing	Percs slowly wetness droughty
Grano-----	5	Slight	Severe: hard to pack wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness	Percs slowly wetness
Huot-----	5	Severe: seepage	Severe: hard to pack	Severe: slow refill cutbanks cave	Frost action percs slowly	Wetness droughty	Percs slowly wetness soil blowing	Percs slowly droughty
Wildwood-----	5	Slight	Severe: hard to pack ponding	Severe: slow refill	Frost action percs slowly ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness
708: Rushlake-----	85	Severe: seepage	Severe: seepage	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Droughty
Corliss-----	6	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Fast intake slope droughty	Too sandy soil blowing	Droughty
Redby-----	5	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
708:								
Hangaard-----	3	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Pits, gravel-----	1	---	---	---	---	---	---	---
712:								
Rosewood-----	85	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Deerwood-----	6	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Subsides ponding cutbanks cave	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
Hangaard-----	5	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Ulen-----	4	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Droughty
721B:								
Corliss-----	85	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Fast intake slope droughty	Too sandy soil blowing	Droughty
Rushlake-----	10	Severe: seepage	Severe: seepage	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Droughty
Hangaard-----	4	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Pits, gravel-----	1	---	---	---	---	---	---	---
733:								
Berner-----	90	Severe: seepage	Severe: excess humus ponding	Severe: slow refill cutbanks cave	Frost action subsides ponding	Rooting depth soil blowing ponding	Soil blowing ponding	Rooting depth wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
733: Grygla-----	5	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Frost action	Wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily wetness
Seelyeville-----	5	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Soil blowing ponding	Wetness
737: Mahkonce-----	85	Slight	Moderate: wetness	Severe: slow refill	Frost action percs slowly	Wetness soil blowing	Wetness soil blowing	Percs slowly
Auganaush-----	10	Slight	Severe: wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness	Percs slowly wetness
Eckvoll-----	5	Severe: seepage	Moderate: piping wetness	Severe: slow refill cutbanks cave	Frost action	Fast intake wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily
755: Woodslake-----	85	Slight	Severe: hard to pack ponding	Severe: slow refill	Percs slowly ponding	Slow intake ponding droughty	Percs slowly ponding	Percs slowly wetness droughty
Boash-----	8	Moderate: seepage	Severe: piping wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Wetness	Percs slowly wetness
Wildwood-----	5	Slight	Severe: hard to pack ponding	Severe: slow refill	Frost action percs slowly ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness
Dora-----	2	Severe: seepage	Severe: hard to pack ponding	Severe: slow refill	Percs slowly subsides ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness
767: Auganaush-----	90	Slight	Severe: wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness	Percs slowly wetness
Mustinka-----	5	Slight	Severe: wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Erodes easily wetness	Erodes easily percs slowly wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
767: Wildwood-----	3	Slight	Severe: hard to pack ponding	Severe: slow refill	Frost action percs slowly ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness
Mahkonce-----	2	Slight	Moderate: wetness	Severe: slow refill	Frost action percs slowly	Wetness soil blowing	Wetness soil blowing	Percs slowly
794: Clearriver-----	85	Severe: seepage	Severe: seepage	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
Hiwood-----	7	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Slope cutbanks cave	Slope wetness droughty	Too sandy wetness	Droughty
Meehan-----	5	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Too acid cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Faunce-----	3	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Fast intake droughty	Too sandy soil blowing	Rooting depth droughty
1002: Fluvaquents, frequently flooded-----	90	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Flooding frost action ponding	Rooting depth ponding droughty	Too sandy soil blowing ponding	Rooting depth wetness droughty
Seelyeville-----	6	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Frost action ponding	Ponding	Ponding	Wetness
Hapludalfs-----	2	Severe: seepage slope	Severe: piping	Severe: slow refill	Frost action slope	Slope wetness soil blowing	Erodes easily slope wetness	Erodes easily slope
Water-----	2	---	---	---	---	---	---	---
1030: Pits, gravel-----	75	---	---	---	---	---	---	---

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1030:								
Udipsamments-----	20	Severe: seepage slope	Severe: seepage piping	Severe: no water	Deep to water	Fast intake slope droughty	Slope too sandy soil blowing	Slope droughty
Corliss-----	2	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Fast intake slope droughty	Too sandy soil blowing	Droughty
Karlstad-----	2	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Large stones too sandy wetness	Large stones droughty
Hangaard-----	1	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Wetness droughty
1031:								
Seelyeville, ponded----	90	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Frost action ponding	Ponding	Ponding	Wetness
Cathro-----	4	Severe: seepage	Severe: piping ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Soil blowing ponding	Wetness
Dora-----	3	Severe: seepage	Severe: hard to pack ponding	Severe: slow refill	Percs slowly subsides ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness
Markey-----	3	Severe: seepage	Severe: seepage piping ponding	Severe: slow refill cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
1067:								
Fluvaquents, frequently flooded-----	60	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Flooding frost action ponding	Rooting depth ponding droughty	Too sandy soil blowing ponding	Rooting depth wetness droughty

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1067:								
Hapludalfs-----	30	Severe: seepage slope	Severe: piping	Severe: slow refill	Frost action slope	Slope wetness soil blowing	Erodes easily slope wetness	Erodes easily slope
Seelyeville-----	5	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Frost action ponding	Ponding	Ponding	Wetness
Water-----	5	---	---	---	---	---	---	---
1133B:								
Skime-----	85	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Droughty
Hiwood-----	10	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Slope cutbanks cave	Slope wetness droughty	Too sandy wetness	Droughty
Zippel-----	5	Severe: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action cutbanks cave	Wetness	Erodes easily wetness soil blowing	Erodes easily wetness
1134:								
Borup-----	55	Severe: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action cutbanks cave	Wetness	Wetness	Wetness
Glyndon-----	35	Severe: seepage	Severe: piping	Severe: cutbanks cave	Frost action cutbanks cave	Wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily
Augsburg, depressional-	5	Severe: seepage	Severe: hard to pack ponding	Severe: slow refill cutbanks cave	Frost action percs slowly ponding	Percs slowly ponding	Percs slowly ponding	Percs slowly wetness
Skime-----	5	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Droughty
1144:								
Strathcona, depressional-----	45	Severe: seepage	Severe: piping ponding	Severe: slow refill cutbanks cave	Frost action ponding	Soil blowing ponding	Soil blowing ponding	Wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1144: Kratka, depressional---	45	Severe: seepage	Severe: piping ponding	Severe: slow refill cutbanks cave	Ponding	Soil blowing ponding	Soil blowing ponding	Rooting depth wetness
Kratka-----	5	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Favorable	Wetness soil blowing droughty	Erodes easily wetness soil blowing	Erodes easily wetness droughty
Northwood-----	5	Severe: seepage	Severe: piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Rooting depth soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily rooting depth wetness
1154: Sax-----	90	Moderate: seepage	Severe: piping ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily wetness
Wabanica-----	5	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
Cathro-----	3	Severe: seepage	Severe: piping ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Soil blowing ponding	Wetness
Woodslake-----	2	Slight	Severe: hard to pack ponding	Severe: slow refill	Percs slowly ponding	Slow intake ponding droughty	Percs slowly ponding	Percs slowly wetness droughty
1158: Skagen-----	85	Severe: seepage	Severe: piping	Moderate: slow refill deep to water	Frost action	Wetness	Wetness	Favorable
Percy-----	10	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
Foxhome-----	5	Severe: seepage	Severe: piping	Severe: cutbanks cave	Frost action	Wetness soil blowing	Wetness soil blowing	Favorable
1170: Skagen, very cobbly----	85	Severe: seepage	Severe: piping	Moderate: slow refill deep to water	Frost action	Wetness	Wetness	Favorable

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1170: Percy, very cobbly-----	10	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
Foxhome-----	5	Severe: seepage	Severe: piping	Severe: cutbanks cave	Frost action	Wetness soil blowing	Wetness soil blowing	Favorable
1179B: Moranville-----	85	Severe: seepage	Severe: thin layer	Severe: slow refill cutbanks cave	Frost action	Wetness droughty	Erodes easily wetness soil blowing	Erodes easily droughty
Baudette-----	5	Moderate: seepage slope	Severe: piping	Severe: cutbanks cave	Frost action slope cutbanks cave	Slope wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily
Hiwood-----	5	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Slope cutbanks cave	Slope wetness droughty	Too sandy wetness	Droughty
Spooner-----	5	Moderate: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action	Erodes easily wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily wetness
1181: Rosewood-----	50	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Ulen-----	40	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Droughty
Redby-----	5	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
Deerwood-----	3	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Subsides ponding cutbanks cave	Soil blowing ponding	Too sandy soil blowing ponding	Wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1181: Syrene-----	2	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Cutbanks cave	Wetness soil blowing droughty	Erodes easily too sandy wetness	Erodes easily wetness droughty
1182: Warroad-----	85	Severe: seepage	Severe: wetness	Severe: slow refill cutbanks cave	Frost action	Wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily wetness
Wabanica-----	7	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
Enstrom-----	5	Severe: seepage	Severe: piping	Severe: slow refill cutbanks cave	Favorable	Wetness droughty	Erodes easily wetness	Erodes easily droughty
Sax-----	3	Moderate: seepage	Severe: piping ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily wetness
1187: Dora, ponded-----	90	Severe: seepage	Severe: hard to pack ponding	Severe: slow refill	Frost action percs slowly ponding	Percs slowly ponding	Percs slowly ponding	Percs slowly wetness
Seelyville, ponded----	4	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Frost action ponding	Ponding	Ponding	Wetness
Wildwood-----	4	Slight	Severe: hard to pack ponding	Severe: slow refill	Frost action percs slowly ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness
Boash-----	2	Moderate: seepage	Severe: piping wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Wetness	Percs slowly wetness
1191: Sahkahtay-----	85	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Cormant-----	5	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1191: Deerwood-----	5	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Subsides ponding cutbanks cave	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
Karlstad-----	3	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Large stones too sandy wetness	Large stones droughty
Redby-----	2	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
1206: Cormant-----	55	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Redby-----	35	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
Hiwood-----	5	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Slope cutbanks cave	Slope wetness droughty	Too sandy wetness	Droughty
Leafriver-----	5	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
1214: Mustinka-----	90	Slight	Severe: wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Erodes easily wetness	Erodes easily percs slowly wetness
Espelie-----	4	Severe: seepage	Severe: wetness	Severe: slow refill cutbanks cave	Frost action percs slowly	Wetness soil blowing droughty	Percs slowly wetness soil blowing	Percs slowly wetness droughty
Wildwood-----	4	Slight	Severe: hard to pack ponding	Severe: slow refill	Frost action percs slowly ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1214: Dalbo-----	2	Moderate: seepage	Moderate: hard to pack wetness	Severe: slow refill	Frost action percs slowly	Wetness	Erodes easily wetness	Erodes easily percs slowly
1274B: Redby-----	40	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
Hiwood-----	30	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Slope cutbanks cave	Slope wetness droughty	Too sandy wetness	Droughty
Leafriver, wooded-----	15	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
Clearriver-----	5	Severe: seepage	Severe: seepage	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
Cormant-----	5	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Zimmerman-----	5	Severe: seepage	Severe: seepage piping	Severe: no water	Deep to water	Fast intake slope droughty	Too sandy soil blowing	Droughty
1298: Borup-----	90	Severe: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action cutbanks cave	Wetness	Wetness	Wetness
Augsburg, depressional-	3	Severe: seepage	Severe: hard to pack ponding	Severe: slow refill cutbanks cave	Frost action percs slowly ponding	Percs slowly ponding	Percs slowly ponding	Percs slowly wetness
Glyndon-----	3	Severe: seepage	Severe: piping	Severe: cutbanks cave	Frost action cutbanks cave	Wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1298: Sago-----	2	Moderate: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
Skime-----	2	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Droughty
1302: Foldahl-----	85	Severe: seepage	Severe: piping	Severe: slow refill cutbanks cave	Frost action	Wetness	Erodes easily wetness soil blowing	Erodes easily
Kratka-----	10	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Favorable	Wetness soil blowing droughty	Erodes easily wetness soil blowing	Erodes easily wetness droughty
Foxhome-----	5	Severe: seepage	Severe: piping	Severe: cutbanks cave	Frost action	Wetness soil blowing	Wetness soil blowing	Favorable
1304: Glyndon-----	85	Severe: seepage	Severe: piping	Severe: cutbanks cave	Frost action cutbanks cave	Wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily
Borup-----	10	Severe: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action cutbanks cave	Wetness	Wetness	Wetness
Skime-----	5	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Droughty
1305: Hilaire-----	85	Severe: seepage	Severe: hard to pack	Severe: slow refill cutbanks cave	Frost action percs slowly	Wetness droughty	Percs slowly wetness soil blowing	Percs slowly droughty
Espelie-----	11	Severe: seepage	Severe: wetness	Severe: slow refill cutbanks cave	Frost action percs slowly	Wetness soil blowing droughty	Percs slowly wetness soil blowing	Percs slowly wetness droughty

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1305: Grano-----	2	Slight	Severe: hard to pack wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness	Percs slowly wetness
Redby-----	2	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
1314: Tacoosh-----	90	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Frost action subsides ponding	Ponding	Ponding	Wetness
Rifle-----	8	Severe: seepage	Severe: excess humus ponding	Moderate: slow refill	Frost action ponding	Ponding	Ponding	Wetness
Sax-----	2	Moderate: seepage	Severe: piping ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily wetness
1316: Wheatville-----	85	Severe: seepage	Severe: hard to pack	Severe: slow refill cutbanks cave	Frost action percs slowly	Wetness	Percs slowly wetness	Percs slowly
Augsburg-----	13	Severe: seepage	Severe: hard to pack wetness	Severe: slow refill cutbanks cave	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness	Percs slowly wetness
Grano-----	2	Slight	Severe: hard to pack wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness	Percs slowly wetness
1326: Augsburg, depressional-	45	Severe: seepage	Severe: hard to pack ponding	Severe: slow refill cutbanks cave	Frost action percs slowly ponding	Percs slowly ponding	Percs slowly ponding	Percs slowly wetness
Wabanica, depressional-	45	Moderate: seepage	Severe: piping ponding	Severe: slow refill	Frost action ponding	Ponding	Erodes easily ponding	Erodes easily wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1326:								
Sax-----	6	Moderate: seepage	Severe: piping ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily wetness
Espelie-----	2	Severe: seepage	Severe: wetness	Severe: slow refill cutbanks cave	Frost action percs slowly	Wetness soil blowing droughty	Percs slowly soil blowing	Percs slowly wetness droughty
Zippel-----	2	Severe: seepage	Severe: piping wetness	Severe: cutbanks cave	Frost action cutbanks cave	Wetness	Erodes easily wetness soil blowing	Erodes easily wetness
1327B:								
Karlstad-----	65	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Large stones too sandy wetness	Large stones droughty
Marquette-----	25	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Fast intake slope droughty	Too sandy soil blowing	Droughty
Sahkahtay-----	7	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Redby-----	3	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
1328:								
Northwood, wooded-----	90	Severe: seepage	Severe: piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Rooting depth soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily rooting depth wetness
Berner, wooded-----	5	Severe: seepage	Severe: excess humus ponding	Severe: slow refill cutbanks cave	Frost action subsides ponding	Rooting depth soil blowing ponding	Soil blowing ponding	Rooting depth wetness
Grygla-----	5	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Frost action	Wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1333: Dora, wooded-----	90	Severe: seepage	Severe: hard to pack ponding	Severe: slow refill	Percs slowly subsides ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness
Lupton-----	4	Severe: seepage	Severe: excess humus wetness	Severe: slow refill	Frost action subsides	Wetness soil blowing	Wetness soil blowing	Wetness
Wildwood-----	4	Slight	Severe: hard to pack ponding	Severe: slow refill	Frost action percs slowly ponding	Percs slowly soil blowing ponding	Percs slowly soil blowing ponding	Percs slowly wetness
Auganaush-----	2	Slight	Severe: wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness	Percs slowly wetness
1356: Water, miscellaneous.								
1399B: Two Inlets-----	85	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Fast intake slope droughty	Too sandy soil blowing	Rooting depth droughty
Wurtsmith-----	6	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Deep to water	Fast intake droughty	Too sandy soil blowing	Droughty
Zimmerman-----	6	Severe: seepage	Severe: seepage piping	Severe: no water	Deep to water	Fast intake slope droughty	Too sandy soil blowing	Droughty
Meehan-----	3	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Too acid cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
1401: Grygla, depressional---	90	Severe: seepage	Severe: piping ponding	Severe: slow refill cutbanks cave	Frost action ponding	Soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily wetness
Northwood, wooded-----	5	Severe: seepage	Severe: piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Rooting depth soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily rooting depth wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1401: Chilgren-----	3	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Rooting depth wetness soil blowing	Wetness soil blowing	Rooting depth wetness
Grygla-----	2	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Frost action	Wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily wetness
1402: Leafriver, wooded-----	90	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
Cormant-----	4	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Tawas-----	4	Severe: seepage	Severe: seepage piping wetness	Severe: slow refill cutbanks cave	Frost action subsides cutbanks cave	Wetness soil blowing	Too sandy wetness soil blowing	Wetness
Redby-----	2	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
1404: Berner, wooded-----	90	Severe: seepage	Severe: excess humus ponding	Severe: slow refill cutbanks cave	Frost action subsides ponding	Rooting depth soil blowing ponding	Soil blowing ponding	Rooting depth wetness
Lupton-----	4	Severe: seepage	Severe: excess humus wetness	Severe: slow refill	Frost action subsides	Wetness soil blowing	Wetness soil blowing	Wetness
Northwood, wooded-----	4	Severe: seepage	Severe: piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Rooting depth soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily rooting depth wetness
Grygla-----	2	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Frost action	Wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1405:								
Lallie-----	90	Slight	Severe: hard to pack ponding	Severe: slow refill	Frost action percs slowly ponding	Erodes easily percs slowly ponding	Erodes easily percs slowly ponding	Erodes easily excess salt wetness
Sax-----	7	Moderate: seepage	Severe: piping ponding	Severe: slow refill	Frost action subsides ponding	Soil blowing ponding	Erodes easily soil blowing ponding	Erodes easily wetness
Wabanica-----	3	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
1414:								
Nereson, very cobbly---	85	Severe: seepage	Severe: seepage piping	Moderate: slow refill deep to water	Frost action	Wetness soil blowing	Wetness soil blowing	Favorable
Percy, very cobbly----	10	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
Pelan-----	3	Severe: seepage	Severe: piping	Moderate: slow refill cutbanks cave deep to water	Favorable	Wetness droughty	Wetness soil blowing	Rooting depth droughty
Foxhome-----	2	Severe: seepage	Severe: piping	Severe: cutbanks cave	Frost action	Wetness soil blowing	Wetness soil blowing	Favorable
1428:								
Karlsruhe-----	85	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Cutbanks cave	Wetness soil blowing droughty	Too sandy wetness soil blowing	Droughty
Syrene-----	10	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Cutbanks cave	Wetness soil blowing droughty	Erodes easily too sandy wetness	Erodes easily wetness droughty
Ulen-----	5	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Cutbanks cave	Wetness droughty	Too sandy wetness soil blowing	Droughty

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1444:								
Wurtsmith-----	85	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Deep to water	Fast intake droughty	Too sandy soil blowing	Droughty
Meehan-----	10	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Too acid cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Clearriver-----	2	Severe: seepage	Severe: seepage	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
Two Inlets-----	2	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Fast intake slope droughty	Too sandy soil blowing	Rooting depth droughty
Cormant-----	1	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
1448:								
Grano-----	90	Slight	Severe: hard to pack wetness	Severe: slow refill	Frost action percs slowly	Percs slowly slow intake wetness	Percs slowly wetness	Percs slowly wetness
Percy-----	5	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
Augsburg-----	3	Severe: seepage	Severe: hard to pack wetness	Severe: slow refill cutbanks cave	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness	Percs slowly wetness
Woodslake-----	2	Slight	Severe: hard to pack ponding	Severe: slow refill	Percs slowly ponding	Slow intake ponding droughty	Percs slowly ponding	Percs slowly wetness droughty
1449:								
Grano-----	90	Slight	Severe: hard to pack wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness	Percs slowly wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1449:								
Percy-----	5	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
Augsburg-----	3	Severe: seepage	Severe: hard to pack wetness	Severe: slow refill cutbanks cave	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness	Percs slowly wetness
Woodslake-----	2	Slight	Severe: hard to pack ponding	Severe: slow refill	Percs slowly ponding	Slow intake ponding droughty	Percs slowly ponding	Percs slowly wetness droughty
1807:								
Cathro, ponded-----	90	Severe: seepage	Severe: piping ponding	Severe: slow refill	Frost action ponding	Ponding	Ponding	Wetness
Haug-----	4	Moderate: seepage	Severe: piping ponding	Moderate: slow refill	Frost action ponding	Soil blowing ponding	Soil blowing ponding	Wetness
Seelyeville, ponded----	4	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Frost action ponding	Ponding	Ponding	Wetness
Percy-----	2	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Wetness	Wetness	Wetness
1808:								
Markey, ponded-----	90	Severe: seepage	Severe: seepage piping ponding	Severe: slow refill cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
Leafriver-----	4	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
Seelyeville, ponded----	4	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Frost action ponding	Ponding	Ponding	Wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1808: Cormant-----	2	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
1918: Croke-----	85	Severe: seepage	Severe: hard to pack	Severe: slow refill cutbanks cave	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness soil blowing	Percs slowly
Augsburg-----	13	Severe: seepage	Severe: hard to pack wetness	Severe: slow refill cutbanks cave	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness	Percs slowly wetness
Grano-----	2	Slight	Severe: hard to pack wetness	Severe: slow refill	Frost action percs slowly	Percs slowly wetness	Percs slowly wetness	Percs slowly wetness
1923B: Garnes, very stony----	85	Moderate: seepage	Severe: piping	Moderate: slow refill deep to water	Frost action	Wetness	Wetness	Rooting depth
Chilgren-----	10	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Frost action	Rooting depth wetness soil blowing	Wetness soil blowing	Rooting depth wetness
Eckvoll-----	3	Severe: seepage	Moderate: piping wetness	Severe: slow refill cutbanks cave	Frost action	Fast intake wetness soil blowing	Erodes easily wetness soil blowing	Erodes easily
Pelan-----	2	Severe: seepage	Severe: piping	Moderate: slow refill cutbanks cave deep to water	Favorable	Wetness droughty	Wetness soil blowing	Rooting depth droughty
1984: Leafriver-----	90	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness

Table 22.--Water Management--Continued

Map symbol and component name	Percent of map unit	Limitations for--			Features affecting--			
		Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1984: Cormant-----	5	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Wetness droughty
Markey-----	3	Severe: seepage	Severe: seepage piping ponding	Severe: slow refill cutbanks cave	Frost action subsides ponding	Soil blowing ponding	Too sandy soil blowing ponding	Wetness
Redby-----	2	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Cutbanks cave	Fast intake wetness droughty	Too sandy wetness soil blowing	Droughty
W: Water.								

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major horizons of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 23 gives estimates of the engineering classification and of the range of index properties for the major horizons of each soil in the survey area. Most soils have horizons of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each horizon is indicated. The range in depth and information on other properties of each horizon are given in the series descriptions under the heading "Soil Series and Detailed Soil Map Units."

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less

than 52 percent sand. If the content of particles coarser than sand is as much as 15 percent, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2000).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated

sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Tables 24 and 25 show estimates of some characteristics and features that affect soil behavior. These estimates are given for the major horizons of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each horizon is indicated. The range in depth and information on other properties of each horizon are given in the series descriptions under the heading "Soil Series and Detailed Soil Map Units."

In table 24, *clay* as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. The estimated clay content of each major soil horizon is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence linear extensibility, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earth-moving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $\frac{1}{3}$ -bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In table 24, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter.

Bulk density data are used to compute linear extensibility, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. Permeability estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems, irrigation systems, and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil horizon. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility percent is the linear expression of the volume difference of natural soil fabric at $\frac{1}{3}$ -bar or $\frac{1}{10}$ -bar water content and oven dryness. The volume change is reported as percent change for the whole soil. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

Linear extensibility of 3 percent or more can cause damage to buildings, roads, and other structures. Special design is often needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 24, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be

maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, very fine sand, sand, and organic matter (as much as 4 percent) and on soil structure and permeability. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to wind erosion in cultivated areas. The groups indicate the susceptibility of soil to wind erosion. Soils are grouped according to the following distinctions:

1. Coarse sands, sands, fine sands, and very fine sands. These soils generally are not suitable for crops. They are extremely erodible, and vegetation is difficult to establish.

2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, and sapric soil material. These soils are very highly erodible. Crops can be grown if intensive measures to control wind erosion are used.

3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams. These soils are highly erodible. Crops can be grown if intensive measures to control wind erosion are used.

- 4L. Calcareous loams, silt loams, clay loams, and silty clay loams that have more than 5 percent finely divided calcium carbonate. These soils are highly erodible. Crops can be grown if intensive measures to control wind erosion are used.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay. These soils are moderately erodible. Crops can be grown if measures to control wind erosion are used.

5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy

clays, and hemic soil material. These soils have less than 5 percent finely divided calcium carbonate. They are moderately erodible. Crops can be grown if measures to control wind erosion are used.

6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay. These soils have less than 5 percent finely divided calcium carbonate. They are moderately erodible. Crops can be grown if ordinary measures to control wind erosion are used.

7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material. These soils have less than 5 percent finely divided calcium carbonate. They are very slightly erodible. Crops can be grown if ordinary measures to control wind erosion are used.

8. Soils that are not subject to wind erosion because of rock fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

In table 25, *cation-exchange capacity* is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Gypsum is expressed as a percent, by weight, of

hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Water Features

Soil moisture status is an estimate of the fluctuating water content in a soil. It greatly influences vegetation type and plant growth; physical properties of soils, such as permeability, workability, strength, linear extensibility, and frost action; and chemical interactions and transport. Many other properties, qualities, and interpretations also are affected. Soil moisture status is important in the classification of soils, wetland, and habitat.

Table 26 gives estimates of soil moisture for each component of a map unit at various depths for every month of the year. The depths displayed are representative values that are indicative of conditions that occur most of the time. *Dry* indicates a moisture condition under which most plants (especially crops) cannot extract water for growth. *Moist* indicates a moisture condition under which soil water is most readily available for plant growth. *Wet* indicates a condition under which water will stand in an unlined hole or at least a condition under which the soil is too wet for the growth of most agricultural species. A moisture status of 4.0-6.7 (wet) indicates that most of the time the component is saturated at some depth between 4.0 feet and 6.7 feet during the month designated. In some years the soil may be saturated at a depth of less than 4.0 feet or more than 6.7 feet; however, field observations indicate that the soil will be saturated between these depths in most years. In the summer, the soil may show the effects of drying plus intermittent rains that result in a moist or wet layer over a dry layer that becomes moist or wet again.

Hydrologic soil groups are groups of soils that, when saturated, have the same runoff potential under similar storm and ground cover conditions. Table 26 gives the hydrologic group that has been assigned to each component of a map unit. The soil properties that affect the runoff potential are those that influence the minimum rate of infiltration in a bare soil after prolonged wetting and when the soil is not frozen. These properties include the depth to a zone in which the soil moisture status is wet, the infiltration rate, permeability after prolonged wetting, and the depth to a very slowly permeable horizon or horizons. The influences of ground cover and slope are treated independently and are not taken into account in hydrologic soil groups.

In the definitions of the hydrologic soil groups, the infiltration rate is the rate at which water enters the soil at the surface and is controlled by surface conditions. The transmission rate is the rate at which water moves through the soil and is controlled by properties of the soil horizons.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist chiefly of very deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have a moderately fine to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a horizon or horizons that impede the downward movement of water or soils that have a moderately fine or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clayey soils that have a high linear extensibility; soils that have a zone, high in the profile, in which the soil moisture status is wet on a permanent basis; soils that have a claypan or clay horizon or horizons at or near the surface; and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Flooding, the temporary covering of the soil surface by flowing water, is caused by overflow from streams or by runoff from adjacent slopes. Shallow water standing or flowing for short periods after rainfall or snowmelt is not considered flooding. Standing water in marshes and swamps or in closed depressions is considered to be ponding.

Table 27 gives estimates of the frequency and duration of flooding for every month of the year. Flooding frequency is the annual probability of a flood event expressed as a class. *None* indicates no reasonable possibility of flooding (the chance of flooding is nearly 0 percent in any year, or flooding is likely less than once in 500 years). *Very rare* indicates that flooding is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year, or flooding

is likely less than once in 100 years but more than once in 500 years). *Rare* indicates that flooding is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year, or flooding is likely 1 to 5 times in 100 years). *Occasional* indicates that flooding occurs infrequently under usual weather conditions (the chance of flooding is 5 to 50 percent in any year, or flooding is likely 5 to 50 times in 100 years). *Frequent* indicates that flooding is likely to occur often under usual weather conditions (the chance of flooding is more than 50 percent in any year, or flooding is likely more than 50 times in 100 years; but the chance of flooding is less than 50 percent in all months in any year). *Very frequent* indicates that flooding is likely to occur very often under usual weather conditions (the chance of flooding is more than 50 percent in all months of any year).

Flooding duration is the average duration of inundation per flood occurrence expressed as a class. *Extremely brief* is 0.1 hour to 4.0 hours; *very brief* is 4 to 48 hours; *brief* is 2 to 7 days; *long* is 7 to 30 days; and *very long* is more than 30 days. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information on flooding is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and level of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation.

Table 28 gives estimates of the frequency, duration, and depth of ponding for every month of the year. The depths displayed are representative values that are indicative of conditions that occur most of the time.

Ponding frequency is the number of times ponding occurs over a period of time. *None* indicates no reasonable possibility of ponding (the chance of ponding is nearly 0 percent in any year). *Rare* indicates that ponding is unlikely but possible under unusual weather conditions (the chance of ponding ranges from nearly 0 percent to 5 percent in any year, or ponding is likely 0 to 5 times in 100 years). *Occasional* indicates that ponding is expected

infrequently under usual weather conditions (the chance of ponding ranges from 5 to 50 percent in any one year, or ponding is likely 5 to 50 times in 100 years). *Frequent* indicates that ponding is likely to occur under usual weather conditions (the chance of ponding is more than 50 percent in any year, or ponding is likely more than 50 times in 100 years).

Ponding duration is the average length of time of the ponding occurrence. It is expressed as *very brief* (less than 2 days), *brief* (2 to 7 days), *long* (7 to 30 days), and *very long* (more than 30 days).

Soil Features

Table 29 gives estimates of several important soil features used in land use planning that involves engineering considerations. These features are described in the following paragraphs.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to a zone in which the soil moisture status is wet are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a saturated zone high in the profile during the winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be

needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage

class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Table 23.--Engineering Index Properties

(Absence of an entry indicates that the data were not estimated.)

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
47: Colvin-----	85	0-11	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-95	35-50	15-30
		11-41	Silt loam, silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-95	25-50	10-30
		41-80	Loam, silt loam, silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-95	25-50	10-25
Bearden-----	5	0-7	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	90-100	70-90	20-40	5-20
		7-32	Silty clay loam, silt loam	CL, CH	A-6, A-7	0	0	100	100	90-100	70-95	25-55	10-30
		32-80	Silty clay loam, silt loam, loam	CH, CL	A-6, A-7	0	0	100	100	90-100	70-95	25-55	10-30
Grano-----	5	0-13	Clay	CH, CL	A-7	0	0	95-100	90-97	80-95	70-95	45-80	20-50
		13-54	Clay, silty clay, silty clay loam	CH, CL	A-7	0	0	95-100	90-97	80-95	70-95	40-80	20-50
		54-80	Stratified silt loam to clay, clay, silty clay, silty clay loam	CL, CH	A-7	0	0	95-100	90-100	80-97	75-95	40-80	20-50
Sax-----	5	0-15	Muck	PT	A-8	0	0	---	---	---	---	---	---
		15-24	Mucky silt loam, silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
		24-39	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
		39-71	Silt loam, silty clay loam, very fine sandy loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	90-100	50-90	16-40	NP-15
		71-80	Silty clay loam, silty clay, clay	CL, CH	A-7	0	0	100	100	90-100	75-95	40-80	15-50

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
48B:													
Hiwood-----	85	0-3	Fine sand	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-95	5-25	---	NP
		3-22	Sand, fine sand, loamy sand	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-95	5-20	---	NP
		22-80	Sand, fine sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	1-12	---	NP
Redby-----	7	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	SW-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
Clearriver-----	3	0-2	Loamy fine sand	SP-SM, SM	A-2	0	0	95-100	85-100	40-90	10-35	15-25	NP-10
		2-21	Sand, loamy sand	SM, SP-SM	A-2, A-3	0	0	95-100	85-100	55-90	5-35	---	NP
		21-80	Stratified fine sand to gravelly coarse sand	SP, SP-SM	A-1, A-2, A-3	0	0-2	75-100	65-85	40-65	0-10	---	NP
Cormant-----	3	0-6	Loamy fine sand	SM, SP-SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
		6-80	Fine sand, sand, loamy fine sand	SP-SM, SP, SM	A-2, A-3	0	0	100	100	75-100	1-20	0-14	NP
Zimmerman-----	2	0-6	Fine sand	SM, SP-SM	A-2	0	0	100	95-100	95-100	10-20	15-20	NP
		6-80	Fine sand, loamy fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	60-100	5-20	0-20	NP-5
52:													
Augsburg-----	85	0-9	Loam	ML, CL, CL-ML	A-4, A-6	0	0	100	100	95-100	50-90	15-40	NP-15
		9-33	Loam, very fine sandy loam, silt loam	ML	A-4	0	0	100	100	95-100	80-90	15-30	NP-10
		33-80	Silty clay, clay, silty clay loam	CH	A-7	0	0	95-100	95-100	95-100	95-100	45-85	25-65
Croke-----	5	0-12	Very fine sandy loam	CL, CL-ML, ML	A-4	0	0	100	100	85-100	50-95	15-35	NP-10
		12-21	Very fine sandy loam, silt loam, loamy very fine sand	CL, CL-ML, ML	A-4	0	0	100	100	85-100	80-95	15-35	NP-10
		21-80	Clay, silty clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	90-100	40-75	20-45

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
52: Grano-----	5	0-11	Loam	CL-ML, SC-SM	A-4, A-6	0	0	95-100	90-97	65-85	45-65	20-35	5-15
		11-41	Silty clay loam, silty clay, clay	CL, CH	A-7	0	0	95-100	90-97	80-95	70-95	40-80	20-50
		41-80	Clay, silty clay, silty clay loam, stratified silt loam to clay	CH, CL	A-7	0	0	95-100	90-100	80-97	75-95	40-80	20-50
Sago-----	5	0-14	Muck	PT	A-8	0	0	---	---	---	---	---	---
		14-80	Stratified fine sand to silt loam	SC, CL, ML, SM	A-2, A-4	0	0	98-100	95-100	70-95	15-85	15-30	2-9
59: Grimstad-----	85	0-10	Fine sandy loam	SM, SC-SM	A-2, A-4	0	0	100	100	80-100	15-50	15-30	NP-7
		10-30	Loamy sand, loamy fine sand, fine sand	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-90	5-35	15-25	NP-10
		30-80	Sandy loam, fine sandy loam, loam	CL, SC, SC- SM, CL-ML	A-4, A-6	0-1	1-3	95-100	85-100	70-90	40-85	15-40	5-20
Strathcona-----	12	0-10	Fine sandy loam	SM, SC-SM	A-2, A-4	0	0	100	95-100	65-85	30-50	20-30	NP-10
		10-17	Fine sandy loam, sandy loam, loamy fine sand	SM, SC-SM	A-2, A-4	0	0	100	95-100	65-85	15-50	20-30	NP-10
		17-28	Sand, fine sand, loamy fine sand	SP-SM, SM	A-2	0	0-1	95-100	85-100	60-80	10-30	0-14	NP
		28-80	Fine sandy loam, loam, clay loam	CL-ML, CL	A-4, A-6	0-1	1-5	95-100	85-98	70-90	50-70	25-40	5-20

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
59: Foxhome-----	3	0-10	Sandy loam	SM	A-4	0	0-2	95-100	90-100	75-90	35-50	15-30	NP-5
		10-15	Fine sand, loamy fine sand, sand	SW-SM, SM	A-2, A-3	0-1	0-3	95-100	90-100	70-85	5-35	0-25	NP-5
		15-23	gravelly sand, very gravelly coarse sand, very gravelly loamy sand	SP, GP-GM, GP, SP-SM	A-1	0	2-5	30-65	15-45	5-40	0-10	0-20	NP-1
		23-80	Loam, clay loam, silt loam	CL-ML, CL, ML	A-4, A-6	0-1	1-5	90-100	85-100	75-90	50-80	20-40	1-15
64: Ulen-----	85	0-10	Fine sandy loam	SC-SM, SC, SM	A-4	0	0	100	100	80-100	35-50	0-25	NP-8
		10-16	Loamy fine sand, fine sand	SM	A-2	0	0	95-100	95-100	70-95	12-35	0-14	NP
		16-67	Fine sand	SP-SM, SM	A-2, A-3	0	0	100	95-100	80-100	5-35	0-14	NP
		67-80	Very fine sandy loam, fine sandy loam	CL-ML, SC-SM, SM, ML	A-4	0	0	100	95-100	70-95	35-60	20-30	NP-10
Rosewood-----	10	0-11	Fine sandy loam	SC, SC-SM, SM	A-2, A-4	0	0	100	97-100	65-90	30-50	15-30	NP-10
		11-19	Fine sandy loam, loamy fine sand, sandy loam	SM, SC, SC-SM	A-2, A-4	0	0	100	95-100	60-85	25-45	15-30	NP-10
		19-65	Fine sand, sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-95	45-75	5-25	5-15	NP
		65-80	Fine sand, sand, coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-95	40-80	5-35	5-15	NP
Redby-----	3	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	SW-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
Rushlake-----	2	0-8	Loamy sand	SM, SP-SM	A-1-b, A-2-4	0	0	95-100	75-100	15-60	10-35	---	NP
		8-80	gravelly sand, gravelly loamy sand, sand	SP-SM, SP	A-1-b, A-3	0	0-10	55-95	50-90	15-60	2-10	---	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10	4	10	40	200		
						inches	inches						
		In				Pct	Pct					Pct	
65: Foxhome-----	85	0-10	Sandy loam	SM	A-4	0	0-2	95-100	90-100	75-90	35-50	15-30	NP-5
		10-15	Fine sand, loamy fine sand, sand	SW-SM, SM	A-2, A-3	0-1	0-3	95-100	90-100	70-85	5-35	0-25	NP-5
		15-23	gravelly sand, very gravelly coarse sand, very gravelly loamy sand	SP-SM, SP, GP-GM, GP	A-1	0	2-5	30-65	15-45	5-40	0-10	0-20	NP-1
		23-80	Loam, clay loam, silt loam	CL-ML, CL, ML	A-6, A-4	0-1	1-5	90-100	85-100	75-90	50-80	20-40	1-15
Strandquist-----	12	0-8	Loam	SC-SM, SC, CL, CL-ML	A-4, A-6	0	0-3	95-100	95-100	75-90	45-70	20-40	5-20
		8-35	gravelly sand, gravelly coarse sand, very gravelly sand	GP-GM, SP, SP-SM, GP	A-1	0	2-5	35-75	15-55	5-40	0-10	0-20	NP-3
		35-80	Silty clay loam, loam, sandy loam	CL-ML, CL, SC, SC-SM	A-4, A-6	0-1	1-5	95-100	80-100	65-90	35-80	20-40	5-20
Skagen-----	3	0-9	Loam	CL, CL-ML, ML	A-4	0-1	0-3	95-100	85-100	75-95	55-75	20-30	NP-10
		9-19	Loam, fine sandy loam, sandy loam	CL-ML, SC-SM	A-4	0-2	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		19-80	Loam, fine sandy loam, sandy loam	CL-ML, SC-SM	A-4	0-2	1-5	85-100	85-98	55-90	35-70	20-30	5-10
67: Bearden-----	85	0-7	Silt loam	CL-ML, CL	A-6, A-4	0	0	100	100	90-100	70-90	20-40	5-20
		7-32	Silty clay loam, silt loam	CH, CL	A-6, A-7	0	0	100	100	90-100	70-95	25-55	10-30
		32-80	Silt loam, silty clay loam, loam	CH, CL	A-6, A-7	0	0	100	100	90-100	70-95	25-55	10-30

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
67: Colvin-----	15	0-11	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-95	35-50	15-30
		11-41	Silt loam, silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-95	25-50	10-30
		41-80	Loam, silt loam, silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-95	25-50	10-25
77: Garnes-----	85	0-9	Fine sandy loam	SM	A-4	0-1	0-3	95-100	85-100	55-75	35-50	20-30	NP-5
		9-14	Clay loam, sandy clay loam, loam	CL, SC	A-4, A-6	0-1	0-5	95-100	80-100	70-100	45-80	20-40	7-20
		14-80	Sandy loam, loam, fine sandy loam	SC, SM, ML, CL	A-4, A-6	0-1	1-5	95-100	75-95	60-90	35-65	15-40	1-15
Chilgren-----	10	0-5	Fine sandy loam	SC-SM, ML, SM, CL-ML	A-2, A-4	0-1	0-3	90-100	85-100	60-85	25-55	15-35	NP-10
		5-9	Loamy sand, loamy fine sand, fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0-1	0-3	75-100	70-100	50-85	15-55	15-35	NP-10
		9-16	Clay loam, loam, sandy clay loam	ML, CL, SC, SM	A-4, A-6, A-7	0-1	1-5	75-100	70-100	60-95	35-85	25-50	7-20
		16-80	Loam, sandy loam, fine sandy loam	SC, ML, SM, CL	A-4	0-1	2-5	75-100	70-100	50-90	35-70	20-30	3-10
Eckvoll-----	3	0-6	Loamy fine sand	SM, SC-SM	A-2, A-4	0	0-2	90-100	85-100	45-80	25-40	15-20	NP-7
		6-21	Fine sand, sand, loamy fine sand	SM, SP-SM	A-1, A-2, A-3	0	0-2	90-100	85-100	45-75	5-30	15-20	NP-4
		21-26	Clay loam, sandy clay loam, loam	SC, CL	A-6, A-4, A-7	0	0-5	90-100	85-98	65-95	45-75	25-50	7-25
		26-80	Loam, clay loam, fine sandy loam	CL, CL-ML	A-4, A-6, A-7	0-1	1-5	90-100	85-98	70-95	50-80	25-45	5-20

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
77: Pelan-----	2	0-6	Sandy loam	SM, SC-SM	A-2, A-4	0	0-3	95-100	75-100	55-90	30-50	0-20	NP-5
		6-12	Very gravelly sandy loam, very gravelly sandy clay loam	GM, SM, SC, GC	A-1, A-2	0	2-5	45-85	25-50	10-45	5-35	20-30	NP-10
		12-24	Very gravelly coarse sand, very gravelly fine sandy loam	SP-SM, GP-GM, SP, GP	A-1, A-2	0	2-5	40-85	25-50	5-50	1-10	0-14	NP
		24-60	Fine sandy loam, sandy loam, loam	SC, CL, ML, SM	A-4, A-6	0-1	1-5	90-100	85-95	60-90	40-65	10-30	1-15
111: Hangaard-----	90	0-12	Sandy loam	SM	A-2, A-4	0	0-3	95-100	80-100	50-75	20-45	---	NP
		12-80	Stratified gravelly coarse sand, gravelly sand, coarse sand	SP-SM, SP	A-1, A-2, A-3	0	0-3	70-95	55-90	30-60	0-10	---	NP
Deerwood-----	5	0-14	Muck	PT	A-8	0	0	---	---	---	---	---	---
		14-16	Fine sand, loamy sand, fine sandy loam	SM, SP-SM	A-2, A-4	0	0-5	95-100	90-100	50-75	12-50	0-20	NP-4
		16-80	Fine sand, sand, gravelly sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0-5	75-100	55-100	35-70	1-25	0-14	NP
Rushlake-----	3	0-8	Loamy sand	SM, SP-SM	A-1-b, A-2-4	0	0	95-100	75-100	15-60	10-35	---	NP
		8-80	gravelly sand, gravelly loamy sand, sand	SP, SP-SM	A-1-b, A-3	0	0-10	55-95	50-90	15-60	2-10	---	NP
Rosewood-----	2	0-11	Fine sandy loam	SC, SC-SM, SM	A-2, A-4	0	0	100	97-100	65-90	30-50	15-30	NP-10
		11-19	Fine sandy loam, loamy fine sand, sandy loam	SM, SC, SC-SM	A-2, A-4	0	0	100	95-100	60-85	25-45	15-30	NP-10
		19-65	Fine sand, sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-95	45-75	5-25	5-15	NP
		65-80	Fine sand, sand, coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-95	40-80	5-35	5-15	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
116:													
Redby-----	85	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	SW-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
Cormant-----	8	0-6	Loamy fine sand	SM, SP-SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
		6-80	Fine sand, sand, loamy fine sand	SP-SM, SP, SM	A-2, A-3	0	0	100	100	75-100	1-20	0-14	NP
Hiwood-----	6	0-3	Fine sand	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-95	5-25	---	NP
		3-22	Sand, fine sand, loamy sand	SC-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-20	---	NP
		22-80	Sand, fine sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	1-12	---	NP
Leafriver-----	1	0-13	Muck	PT	A-8	0	0	---	---	---	---	---	---
		13-80	Loamy sand, fine sand, sand	SP-SM, SM, SP	A-1-b, A-2, A-2-4, A-3	0	0	95-100	80-100	45-70	3-35	---	NP
117:													
Cormant-----	85	0-6	Loamy fine sand	SP-SM, SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
		6-80	Fine sand, sand, loamy fine sand	SM, SP, SP-SM	A-2, A-3	0	0	100	100	75-100	1-20	0-14	NP
Leafriver-----	7	0-13	Muck	PT	A-8	0	0	---	---	---	---	---	---
		13-80	Loamy sand, fine sand, sand	SP, SP-SM, SM	A-1-b, A-2, A-2-4, A-3	0	0	95-100	80-100	45-70	3-35	---	NP
Epoufette-----	3	0-10	Loamy fine sand	SM	A-1, A-2	0	0-5	95-100	65-95	45-70	15-30	---	NP
		10-20	Sandy loam, gravelly loamy sand	SC, SC-SM, SM	A-2, A-4	0	0-5	95-100	70-95	60-80	25-40	15-25	2-10
		20-60	Stratified gravelly sand, coarse sand, sand	SP-SM, GP, GP-GM, SP	A-1, A-2-4, A-3	0	0-10	50-90	45-85	30-60	0-10	---	NP
Redby-----	3	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	SM, SW-SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
117: Grygla, depressional---	2	0-5	Mucky loamy fine sand	SC-SM, SM	A-2	0	0	100	100	85-95	15-35	0-25	NP-10
		5-36	Sand, fine sand, loamy fine sand	SP-SM, SC-SM, SM	A-2, A-3	0	0-1	95-100	90-100	70-95	5-35	0-20	NP-5
		36-80	Loam, fine sandy loam, silt loam	CL, CL-ML	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20
133: Dalbo-----	85	0-15	Loam	CL, ML	A-4, A-6	0	0	100	100	95-100	60-100	30-40	5-15
		15-23	Clay, silty clay, silty clay loam	CH, CL	A-7	0	0	100	100	85-100	75-95	40-65	20-40
		23-80	Silty clay loam, silty clay, clay	CH, CL	A-6, A-7	0	0	100	95-100	85-100	65-95	40-65	20-40
Mustinka-----	10	0-9	Clay loam	CH, CL	A-7	0	0	100	100	90-100	70-95	40-52	20-30
		9-35	Silty clay, silty clay loam, clay	CH, CL	A-7	0	0	100	100	90-100	75-95	47-72	25-44
		35-62	Silty clay loam, clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	85-100	70-95	31-47	12-25
		62-80	Clay loam, silty clay loam, loam	CL	A-6, A-7	0-1	1-5	95-100	85-98	75-95	50-90	31-47	12-25
Moranville-----	5	0-8	Loamy fine sand	SM	A-2	0	0	100	100	65-80	15-35	15-20	NP-5
		8-24	Fine sand, loamy fine sand	SM	A-2, A-4	0	0	100	100	75-90	15-50	10-15	NP
		24-42	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-95	35-45	15-20
		42-80	Very fine sandy loam, silt loam, silty clay loam	ML, CL-ML, CL	A-4, A-6, A-7	0	0	100	95-100	80-100	50-95	20-45	5-15

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
145: Enstrom-----	85	0-6	Loamy fine sand	SM, SP-SM	A-2	0	0	100	95-100	80-95	10-25	---	NP
		6-29	Fine sand, sand, loamy sand	SP-SM, SM	A-2, A-3	0	0-3	95-100	80-100	50-80	5-30	0-20	NP-3
		29-80	Fine sandy loam, loam, silty clay loam	CL-ML, CL, SC-SM, SC	A-4, A-6	0-1	0-3	90-100	80-95	65-90	35-80	20-40	5-15
Grygla-----	10	0-6	Loamy fine sand	SC-SM, SM	A-2	0	0	100	100	85-95	15-35	15-25	NP-7
		6-26	Sand, fine sand, loamy fine sand	SP-SM, SM, SC-SM	A-2, A-3	0	0-1	95-100	90-100	70-95	5-35	15-20	NP-5
		26-80	Loam, fine sandy loam, silt loam	CL-ML, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20
Redby-----	4	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	SM, SW-SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
Pelan-----	1	0-6	Sandy loam	SM, SC-SM	A-2, A-4	0	0-3	95-100	75-100	55-90	30-50	0-20	NP-5
		6-12	Very gravelly sandy loam, very gravelly sandy clay loam	GM, SC, GC, SM	A-1, A-2	0	2-5	45-85	25-50	10-45	5-35	20-30	NP-10
		12-24	Very gravelly coarse sand, very gravelly fine sandy loam	SP, GP, SP- SM, GP-GM	A-1, A-2	0	2-5	40-85	25-50	5-50	1-10	0-14	NP
		24-60	Fine sandy loam, sandy loam, loam	SC, ML, CL, SM	A-4, A-6	0-1	1-5	90-100	85-95	60-90	40-65	10-30	1-15

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10						
						inches	inches	4	10	40	200		
		In				Pct	Pct					Pct	
147: Spooners-----	85	0-6	Very fine sandy loam	ML, SM	A-4	0	0	100	100	90-100	35-55	20-40	1-10
		6-15	Loamy very fine sand, very fine sandy loam, loam	CL, SM, SC, ML	A-4, A-6	0	0	100	100	90-100	35-60	10-40	1-15
		15-22	Loam, silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
		22-60	Very fine sandy loam, silt loam, sandy loam	SM, SC, CL, ML	A-4, A-6	0	0	100	100	90-100	35-95	16-40	NP-15
Baudette-----	5	0-8	Fine sandy loam	ML, SM	A-4	0	0	100	100	75-95	40-60	15-25	NP-4
		8-10	Very fine sandy loam, fine sandy loam, silt loam	SM, ML	A-4	0	0	100	100	75-100	40-90	15-40	NP-10
		10-30	Clay loam, silt loam, silty clay loam	ML, CL, CL-ML	A-4, A-6, A-7	0	0	100	100	95-100	80-100	20-50	5-20
		30-80	Silt loam, very fine sandy loam, loamy very fine sand	ML	A-4	0	0	100	100	95-100	70-100	20-40	1-10
Grygla-----	5	0-6	Loamy fine sand	SM, SC-SM	A-2	0	0	100	100	85-95	15-35	15-25	NP-7
		6-26	Sand, fine sand, loamy fine sand	SC-SM, SP-SM, SM	A-2, A-3	0	0-1	95-100	90-100	70-95	5-35	15-20	NP-5
		26-80	Loam, fine sandy loam, silt loam	CL-ML, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20
Sago-----	5	0-14	Muck	PT	A-8	0	0	---	---	---	---	---	---
		14-80	Stratified fine sand to silt loam	SC, CL, ML, SM	A-2, A-4	0	0	98-100	95-100	70-95	15-85	15-30	2-9
158B: Zimmerman-----	85	0-6	Fine sand	SM, SP-SM	A-2	0	0	100	95-100	95-100	10-20	15-20	NP
6-80		Fine sand, loamy fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	60-100	5-20	0-20	NP-5	

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
158B: Hiwood-----	6	0-3	Fine sand	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-95	5-25	---	NP
		3-22	Sand, fine sand, loamy sand	SC-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-20	---	NP
		22-80	Sand, fine sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	1-12	---	NP
Two Inlets-----	6	0-2	Loamy sand	SM	A-2	0	0-2	90-100	85-100	50-70	15-30	15-20	NP-5
		2-4	Loamy coarse sand	SM	A-2	0	0-2	90-100	75-100	35-65	5-15	15-20	NP-5
		4-17	Loamy coarse sand	SM, SP-SM	A-2-4, A-3, A-1	0	0-3	90-100	75-95	35-65	5-15	15-25	NP-5
		17-80	Sand, coarse sand	SP, SP-SM	A-1, A-3	0	0-5	85-95	75-95	35-75	2-10	---	NP
Redby-----	3	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	SW-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
167B: Baudette-----	85	0-8	Fine sandy loam	SM, ML	A-4	0	0	100	100	75-95	40-60	15-25	NP-4
		8-10	Very fine sandy loam, fine sandy loam, silt loam	SM, ML	A-4	0	0	100	100	75-100	40-90	15-40	NP-10
		10-30	Clay loam, silt loam, silty clay loam	CL, ML, CL-ML	A-4, A-6, A-7	0	0	100	100	95-100	80-100	20-50	5-20
		30-80	Silt loam, very fine sandy loam, loamy very fine sand	ML	A-4	0	0	100	100	95-100	70-100	20-40	1-10
Spooner-----	10	0-6	Very fine sandy loam	ML, SM	A-4	0	0	100	100	90-100	35-55	20-40	1-10
		6-15	Loamy very fine sand, very fine sandy loam, loam	SC, ML, SM, CL	A-4, A-6	0	0	100	100	90-100	35-60	10-40	1-15
		15-22	Loam, silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
		22-60	Very fine sandy loam, silt loam, sandy loam	SM, SC, CL, ML	A-4, A-6	0	0	100	100	90-100	35-95	16-40	NP-15

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
167B: Moranville-----	5	0-8	Loamy fine sand	SM	A-2	0	0	100	100	65-80	15-35	15-20	NP-5
		8-24	Fine sand, loamy fine sand	SM	A-2, A-4	0	0	100	100	75-90	15-50	10-15	NP
		24-42	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-95	35-45	15-20
		42-80	Very fine sandy loam, silt loam, silty clay loam	CL-ML, CL, ML	A-4, A-6, A-7	0	0	100	95-100	80-100	50-95	20-45	5-15
187: Haug-----	90	0-10	Muck	PT	A-8	0	0	---	---	---	---	---	---
		10-16	Mucky sandy loam, fine sandy loam, loam	SM, OL, CL, ML	A-4, A-6	0-1	0-3	95-100	90-100	70-85	35-65	15-40	1-15
		16-80	Loam, sandy loam, fine sandy loam	ML, CL, SC, SM	A-4, A-6	0-1	1-5	95-100	70-100	60-95	35-65	15-40	1-15
Percy-----	5	0-10	Loam	SC-SM, SC, CL-ML, CL	A-4, A-6	0-1	0-3	90-100	85-100	70-95	35-70	20-40	5-15
		10-25	Loam, fine sandy loam, sandy loam	CL, CL-ML	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		25-80	Loam, fine sandy loam, sandy loam	CL, SC, CL- ML, SC-SM	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10
Cathro-----	3	0-8	Muck	PT	A-8	0	0	---	---	---	---	---	---
		8-40	Muck	PT	A-8	0	0	---	---	---	---	---	---
		40-80	Sandy loam, loam, clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0-1	0-5	85-100	75-100	60-100	35-90	20-40	5-20
Boash-----	2	0-9	Clay loam	CL	A-7	0	0-2	95-100	90-100	80-100	70-95	40-50	20-25
		9-29	Clay, silty clay loam, silty clay	CL, CH	A-7	0	0-2	95-100	90-100	80-100	70-95	45-80	25-50
		29-80	Loam, sandy loam, silt loam	CL, CL-ML	A-4, A-6	0-1	1-5	95-100	85-98	70-95	50-90	24-35	6-15

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
191: Epoufette-----	85	0-10	Loamy fine sand	SM	A-1, A-2	0	0-5	95-100	65-95	45-70	15-30	---	NP
		10-20	Sandy loam, gravelly loamy sand	SM, SC-SM, SC	A-2, A-4	0	0-5	95-100	70-95	60-80	25-40	15-25	2-10
		20-60	Stratified gravelly sand, coarse sand, sand	SP-SM, GP-GM, GP, SP	A-1, A-2-4, A-3	0	0-10	50-90	45-85	30-60	0-10	---	NP
Cormant-----	5	0-6	Loamy fine sand	SM, SP-SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
		6-80	Fine sand, sand, loamy fine sand	SP-SM, SP, SM	A-2, A-3	0	0	100	100	75-100	1-20	0-14	NP
Leafriver-----	5	0-13	Muck	PT	A-8	0	0	---	---	---	---	---	---
		13-80	Loamy sand, fine sand, sand	SM, SP, SP-SM	A-1-b, A-2, A-2-4, A-3	0	0	95-100	80-100	45-70	3-35	---	NP
Meehan-----	5	0-8	Loamy sand	SM	A-1, A-2	0	0	90-100	75-100	40-90	15-30	0-14	NP
		8-31	Sand, loamy sand, loamy coarse sand	SM, SP-SM, SP	A-1, A-2, A-3	0	0	90-100	75-100	40-90	3-30	0-14	NP
		31-80	Sand, coarse sand	SP, SP-SM	A-1, A-2, A-3	0	0	90-100	75-100	40-90	0-5	0-14	NP
202: Meehan-----	85	0-8	Loamy sand	SM	A-1, A-2	0	0	90-100	75-100	40-90	15-30	0-14	NP
		8-31	Sand, loamy sand, loamy coarse sand	SP-SM, SP, SM	A-1, A-2, A-3	0	0	90-100	75-100	40-90	3-30	0-14	NP
		31-80	Sand, coarse sand	SP, SP-SM	A-1, A-2, A-3	0	0	90-100	75-100	40-90	0-5	0-14	NP
Cormant-----	8	0-6	Loamy fine sand	SP-SM, SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
		6-80	Fine sand, sand, loamy fine sand	SP-SM, SP, SM	A-2, A-3	0	0	100	100	75-100	1-20	0-14	NP
Wurtsmith-----	5	0-5	Loamy sand	SM, SP-SM	A-1, A-2	0	0	75-100	75-100	40-75	12-30	0-14	NP
		5-45	Coarse sand, sand	SP-SM, SM, SP	A-1, A-2, A-3	0	0	75-100	75-100	40-75	3-30	0-14	NP
		45-80	Coarse sand, sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0	75-100	75-100	40-70	3-15	0-14	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
202: Leafriver-----	2	0-13 13-80	Muck Loamy sand, fine sand, sand	PT SP-SM, SM, SP	A-8 A-1-b, A-2, A-2-4, A-3	0 0	0 0	--- 95-100	--- 80-100	--- 45-70	--- 3-35	--- ---	--- NP
205: Karlstad-----	85	0-7 7-10 10-14 14-80	Loamy sand Coarse sandy loam, sandy loam, fine sandy loam gravelly coarse sandy loam, gravelly sandy loam, gravelly fine sandy loam Stratified gravelly coarse sand to loamy fine sand	SP-SM, SM SC-SM, SM, SC SW-SM, SC-SM, SM, SC SP-SM, SP	A-2, A-3 A-2, A-4 A-1, A-2 A-1, A-2	0-5 0-5 0-5 0-5	0-5 0-5 0-25 0-25	95-100 95-100 65-95 60-100	95-100 95-100 50-75 35-100	75-95 75-95 25-50 20-80	5-35 12-50 10-30 0-55	15-25 15-25 15-25 0-20	NP-4 NP-10 NP-10 NP-3
Sahkahtay-----	7	0-4 4-8 8-14 14-80	Sandy loam Sand, loamy sand gravelly sandy loam, sandy clay loam, loam Loamy sand, sand, gravelly coarse sand	SM SP-SM, SM SC, CL SW, SW-SM, SM	A-2, A-4 A-2 A-6 A-1, A-2-4	0 0 0 0	0 0 0-5 0-5	85-100 85-100 80-100 55-90	80-100 80-100 75-98 50-85	55-85 50-85 50-85 15-60	25-40 5-25 40-60 2-20	15-25 0-14 30-40 0-14	NP-10 NP 10-20 NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
205: Marquette-----	5	0-7	Loamy sand	SP-SM, SC-SM, SM	A-2	0	0-5	90-100	85-100	50-75	10-35	0-20	NP-5
		7-16	Very gravelly fine sandy loam, very gravelly loam, very gravelly sandy loam	SM, GC, GM, SC	A-1, A-2	0	0-15	45-85	20-55	10-45	5-35	0-30	NP-10
		16-80	Stratified extremely gravelly coarse sand to fine sand	GP-GM, GP, SP-SM, SP	A-1, A-2, A-3	0	0-10	40-90	15-90	0-65	0-30	0-14	NP
Redby-----	2	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	SW-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
Pits, gravel----	1	---	---	---	---	---	---	---	---	---	---	---	---
242B: Marquette-----	85	0-7	Loamy sand	SC-SM, SM, SP-SM	A-2	0	0-5	90-100	85-100	50-75	10-35	0-20	NP-5
		7-16	Very gravelly fine sandy loam, very gravelly loam, very gravelly sandy loam	SC, GC, SM, GM	A-1, A-2	0	0-15	45-85	20-55	10-45	5-35	0-30	NP-10
		16-80	Stratified extremely gravelly coarse sand to fine sand	GP-GM, GP, SP-SM, SP	A-1, A-2, A-3	0	0-10	40-90	15-90	0-65	0-30	0-14	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10						
						inches	inches	4	10	40	200		
		In				Pct	Pct					Pct	
242B:													
Karlstad-----	14	0-7	Loamy sand	SM, SP-SM	A-2, A-3	0-5	0-5	95-100	95-100	75-95	5-35	15-25	NP-4
		7-10	Coarse sandy loam, sandy loam, fine sandy loam	SC, SC-SM, SM	A-2, A-4	0-5	0-5	95-100	95-100	75-95	12-50	15-25	NP-10
		10-14	gravelly coarse sandy loam, gravelly sandy loam, gravelly fine sandy loam	SW-SM, SC-SM, SM, SC	A-1, A-2	0-5	0-25	65-95	50-75	25-50	10-30	15-25	NP-10
		14-80	Stratified gravelly coarse sand to loamy fine sand	SP-SM, SP	A-1, A-2	0-5	0-25	60-100	35-100	20-80	0-55	0-20	NP-3
Pits, gravel----	1	---	---	---	---	---	---	---	---	---	---	---	---
280:													
Pelan-----	85	0-6	Sandy loam	SM, SC-SM	A-2, A-4	0	0-3	95-100	75-100	55-90	30-50	0-20	NP-5
		6-12	Very gravelly sandy loam, very gravelly sandy clay loam	SM, GM, GC, SC	A-1, A-2	0	2-5	45-85	25-50	10-45	5-35	20-30	NP-10
		12-24	Very gravelly coarse sand, very gravelly fine sandy loam	GP-GM, SP-SM, GP, SP	A-1, A-2	0	2-5	40-85	25-50	5-50	1-10	0-14	NP
		24-60	Fine sandy loam, sandy loam, loam	CL, ML, SM, SC	A-4, A-6	0-1	1-5	90-100	85-95	60-90	40-65	10-30	1-15
Strandquist-----	10	0-8	Loam	CL-ML, CL, SC, SC-SM	A-4, A-6	0	0-3	95-100	95-100	75-90	45-70	20-40	5-20
		8-35	gravelly sand, gravelly coarse sand, very gravelly sand	SP-SM, SP, GP, GP-GM	A-1	0	2-5	35-75	15-55	5-40	0-10	0-20	NP-3
		35-80	Silty clay loam, loam, sandy loam	CL-ML, SC-SM, SC, CL	A-4, A-6	0-1	1-5	95-100	80-100	65-90	35-80	20-40	5-20

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
280: Garnes-----	3	0-9	Fine sandy loam	SM	A-4	0-1	0-3	95-100	85-100	55-75	35-50	20-30	NP-5
		9-14	Clay loam, sandy clay loam, loam	SC, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-100	45-80	20-40	7-20
		14-80	Sandy loam, loam, fine sandy loam	SC, ML, CL, SM	A-4, A-6	0-1	1-5	95-100	75-95	60-90	35-65	15-40	1-15
Marquette-----	1	0-7	Loamy sand	SP-SM, SC-SM, SM	A-2	0	0-5	90-100	85-100	50-75	10-35	0-20	NP-5
		7-16	Very gravelly fine sandy loam, very gravelly loam, very gravelly sandy loam	SM, GC, GM, SC	A-1, A-2	0	0-15	45-85	20-55	10-45	5-35	0-30	NP-10
		16-80	Stratified extremely gravelly coarse sand to fine sand	GP-GM, GP, SP-SM, SP	A-1, A-2, A-3	0	0-10	40-90	15-90	0-65	0-30	0-14	NP
Pits, gravel----	1	---	---	---	---	---	---	---	---	---	---	---	---
379: Percy, very cobbly-----	90	0-8	Loam	CL-ML, CL, SC-SM, SC	A-4, A-6	0-2	1-5	90-100	85-100	70-95	35-70	20-40	5-15
		8-23	Loam, fine sandy loam, sandy loam	CL-ML, CL	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		23-80	Loam, fine sandy loam, sandy loam	SC, CL, CL- ML, SC-SM	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10
Boash-----	3	0-9	Clay loam	CL	A-7	0	0-2	95-100	90-100	80-100	70-95	40-50	20-25
		9-29	Clay, silty clay loam, silty clay	CL, CH	A-7	0	0-2	95-100	90-100	80-100	70-95	45-80	25-50
		29-80	Loam, sandy loam, silt loam	CL-ML, CL	A-4, A-6	0-1	1-5	95-100	85-98	70-95	50-90	24-35	6-15

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
379: Strandquist-----	3	0-8	Loam	SC-SM, SC, CL, CL-ML	A-4, A-6	0	0-3	95-100	95-100	75-90	45-70	20-40	5-20
		8-35	gravelly sand, gravelly coarse sand, very gravelly sand	SP-SM, GP-GM, SP, GP	A-1	0	2-5	35-75	15-55	5-40	0-10	0-20	NP-3
		35-80	Silty clay loam, loam, sandy loam	SC-SM, SC, CL, CL-ML	A-4, A-6	0-1	1-5	95-100	80-100	65-90	35-80	20-40	5-20
Haug-----	2	0-10	Muck	PT	A-8	0	0	---	---	---	---	---	---
		10-16	Mucky sandy loam, fine sandy loam, loam	SM, CL, ML, OL	A-4, A-6	0-1	0-3	95-100	90-100	70-85	35-65	15-40	1-15
		16-80	Loam, sandy loam, fine sandy loam	SM, CL, ML, SC	A-4, A-6	0-1	1-5	95-100	70-100	60-95	35-65	15-40	1-15
Skagen, very cobbly-----	2	0-10	Loam	CL, ML, CL-ML	A-4	0-2	1-5	95-100	85-100	75-95	55-75	20-30	NP-10
		10-28	Loam, fine sandy loam, sandy loam	CL-ML, SC-SM	A-4	0	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		28-80	Loam, fine sandy loam, sandy loam	CL-ML, SC-SM	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
383: Percy-----	90	0-10	Loam	SC, CL-ML, SC-SM, CL	A-4, A-6	0-1	0-3	90-100	85-100	70-95	35-70	20-40	5-15
		10-25	Loam, fine sandy loam, sandy loam	CL-ML, CL	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		25-80	Loam, fine sandy loam, sandy loam	SC-SM, CL-ML, CL, SC	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10
Boash-----	3	0-9	Clay loam	CL	A-7	0	0-2	95-100	90-100	80-100	70-95	40-50	20-25
		9-29	Clay, silty clay loam, silty clay	CH, CL	A-7	0	0-2	95-100	90-100	80-100	70-95	45-80	25-50
		29-80	Loam, sandy loam, silt loam	CL-ML, CL	A-4, A-6	0-1	1-5	95-100	85-98	70-95	50-90	24-35	6-15

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
383: Strandquist-----	3	0-8	Loam	SC-SM, SC, CL, CL-ML	A-4, A-6	0	0-3	95-100	95-100	75-90	45-70	20-40	5-20
		8-35	gravelly sand, gravelly coarse sand, very gravelly sand	GP, SP, SP- SM, GP-GM	A-1	0	2-5	35-75	15-55	5-40	0-10	0-20	NP-3
		35-80	Silty clay loam, loam, sandy loam	SC-SM, SC, CL, CL-ML	A-4, A-6	0-1	1-5	95-100	80-100	65-90	35-80	20-40	5-20
Haug-----	2	0-10	Muck	PT	A-8	0	0	---	---	---	---	---	---
		10-16	Mucky sandy loam, fine sandy loam, loam	SM, CL, ML, OL	A-4, A-6	0-1	0-3	95-100	90-100	70-85	35-65	15-40	1-15
		16-80	Loam, sandy loam, fine sandy loam	SM, SC, CL, ML	A-4, A-6	0-1	1-5	95-100	70-100	60-95	35-65	15-40	1-15
Skagen-----	2	0-9	Loam	CL, CL-ML, ML	A-4	0-1	0-3	95-100	85-100	75-95	55-75	20-30	NP-10
		9-19	Loam, fine sandy loam, sandy loam	CL-ML, SC-SM	A-4	0-2	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		19-80	Loam, fine sandy loam, sandy loam	CL-ML, SC-SM	A-4	0-2	1-5	85-100	85-98	55-90	35-70	20-30	5-10
384: Percy, depressional---	85	0-8	Mucky loam	CL-ML, CL	A-4, A-6	0-1	0-1	95-100	85-100	75-95	60-75	15-35	5-15
		8-27	Loam, sandy loam, fine sandy loam	CL, CL-ML	A-6, A-4	0-1	1-5	85-100	85-98	65-95	35-75	15-35	5-15
		27-80	Loam, fine sandy loam, sandy loam	ML, SC, SM, CL	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	3-10
Haug-----	7	0-10	Muck	PT	A-8	0	0	---	---	---	---	---	---
		10-16	Mucky sandy loam, fine sandy loam, loam	ML, OL, CL, SM	A-4, A-6	0-1	0-3	95-100	90-100	70-85	35-65	15-40	1-15
		16-80	Loam, sandy loam, fine sandy loam	CL, ML, SC, SM	A-4, A-6	0-1	1-5	95-100	70-100	60-95	35-65	15-40	1-15

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10						
						inches	inches	4	10	40	200		
		In				Pct	Pct					Pct	
384: Percy-----	5	0-10	Loam	SC-SM, CL, CL-ML, SC	A-4, A-6	0-1	0-3	90-100	85-100	70-95	35-70	20-40	5-15
		10-25	Loam, fine sandy loam, sandy loam	CL, CL-ML	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		25-80	Loam, fine sandy loam, sandy loam	SC, SC-SM, CL-ML, CL	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10
Boash-----	3	0-9	Clay loam	CL	A-7	0	0-2	95-100	90-100	80-100	70-95	40-50	20-25
		9-29	Clay, silty clay loam, silty clay	CH, CL	A-7	0	0-2	95-100	90-100	80-100	70-95	45-80	25-50
		29-80	Loam, sandy loam, silt loam	CL, CL-ML	A-4, A-6	0-1	1-5	95-100	85-98	70-95	50-90	24-35	6-15
387: Roliss, depressional---	85	0-8	Loam	CL-ML, CL	A-4, A-6	0-1	0-1	95-100	80-100	80-100	60-90	20-40	5-20
		8-13	Loam, clay loam, silty clay loam	CL	A-6, A-7	0-1	1-5	95-100	80-100	80-90	60-80	20-50	10-30
		13-80	Loam, clay loam	CL, CL-ML	A-4, A-6, A-7	0-1	1-5	95-100	80-98	80-95	60-80	20-50	5-30
Haug-----	10	0-10	Muck	PT	A-8	0	0	---	---	---	---	---	---
		10-16	Mucky sandy loam, fine sandy loam, loam	SM, ML, OL, CL	A-4, A-6	0-1	0-3	95-100	90-100	70-85	35-65	15-40	1-15
		16-80	Loam, sandy loam, fine sandy loam	SM, SC, CL, ML	A-4, A-6	0-1	1-5	95-100	70-100	60-95	35-65	15-40	1-15
Roliss-----	5	0-14	Loam	CL, CL-ML	A-4, A-6	0-1	0-3	95-100	80-100	80-100	60-90	20-40	5-20
		14-20	Loam, clay loam, silty clay loam	CL	A-6, A-7	0-1	1-5	95-100	80-100	80-90	60-80	20-50	10-30
		20-80	Loam, clay loam	CL, CL-ML	A-4, A-6, A-7	0-1	1-5	95-100	80-100	80-95	60-80	20-50	5-30

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
404: Chilgren-----	85	0-5	Fine sandy loam	SC-SM, ML, CL-ML, SM	A-2, A-4	0-1	0-3	90-100	85-100	60-85	25-55	15-35	NP-10
		5-9	Loamy sand, loamy fine sand, fine sandy loam	ML, SM, CL- ML, SC-SM	A-2, A-4	0-1	0-3	75-100	70-100	50-85	15-55	15-35	NP-10
		9-16	Clay loam, loam, sandy clay loam	CL, SC, SM, ML	A-4, A-6, A-7	0-1	1-5	75-100	70-100	60-95	35-85	25-50	7-20
		16-80	Loam, sandy loam, fine sandy loam	SC, CL, SM, ML	A-4	0-1	2-5	75-100	70-100	50-90	35-70	20-30	3-10
Garnes-----	5	0-9	Fine sandy loam	SM	A-4	0-1	0-3	95-100	85-100	55-75	35-50	20-30	NP-5
		9-14	Clay loam, sandy clay loam, loam	SC, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-100	45-80	20-40	7-20
		14-80	Sandy loam, loam, fine sandy loam	SM, CL, ML, SC	A-4, A-6	0-1	1-5	95-100	75-95	60-90	35-65	15-40	1-15
Grygla-----	5	0-6	Loamy fine sand	SC-SM, SM	A-2	0	0	100	100	85-95	15-35	15-25	NP-7
		6-26	Sand, fine sand, loamy fine sand	SP-SM, SC-SM, SM	A-2, A-3	0	0-1	95-100	90-100	70-95	5-35	15-20	NP-5
		26-80	Loam, fine sandy loam, silt loam	CL, CL-ML	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20
Haug-----	5	0-10	Muck	PT	A-8	0	0	---	---	---	---	---	---
		10-16	Mucky sandy loam, fine sandy loam, loam	ML, OL, CL, SM	A-4, A-6	0-1	0-3	95-100	90-100	70-85	35-65	15-40	1-15
		16-80	Loam, sandy loam, fine sandy loam	SM, CL, ML, SC	A-4, A-6	0-1	1-5	95-100	70-100	60-95	35-65	15-40	1-15

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10	4	10	40	200		
						inches	inches						
		In				Pct	Pct					Pct	
412: Mavie-----	85	0-12	Fine sandy loam	SM	A-2, A-4	0	0-3	95-100	85-100	55-85	30-50	15-30	NP-7
		12-18	Loam, fine sandy loam, sandy loam	SC-SM, CL-ML, CL, SC	A-4, A-6	0	2-5	95-100	85-100	70-95	40-75	20-35	5-15
		18-39	Very gravelly coarse sand, very gravelly sand, very gravelly loamy sand	SP-SM, GP-GM, SP, GP	A-1	0	2-5	30-65	15-55	10-30	1-10	---	NP
		39-80	Loam, silt loam, clay loam	ML, CL, CL-ML	A-4, A-6	0-1	1-5	95-100	75-90	70-85	50-75	20-40	2-15
Foxhome-----	5	0-10	Sandy loam	SM	A-4	0	0-2	95-100	90-100	75-90	35-50	15-30	NP-5
		10-15	Fine sand, loamy fine sand, sand	SM, SW-SM	A-2, A-3	0-1	0-3	95-100	90-100	70-85	5-35	0-25	NP-5
		15-23	gravelly sand, very gravelly coarse sand, very gravelly loamy sand	GP-GM, SP-SM, SP, GP	A-1	0	2-5	30-65	15-45	5-40	0-10	0-20	NP-1
		23-80	Loam, clay loam, silt loam	ML, CL-ML, CL	A-4, A-6	0-1	1-5	90-100	85-100	75-90	50-80	20-40	1-15
Northwood-----	5	0-11	Muck	PT	A-8	0	0	---	---	---	---	---	---
		11-16	Fine sandy loam, loamy fine sand, loamy sand	SM, SC-SM	A-2, A-4	0	0-3	95-100	90-100	51-85	15-50	0-35	NP-10
		16-25	Coarse sand, fine sand, loamy fine sand	SM, SP-SM	A-3, A-2	0	0-3	95-100	80-100	70-95	5-35	0-14	NP
		25-80	Loam, clay loam, fine sandy loam	ML, CL, CL-ML	A-4, A-6	0-1	1-5	95-100	90-100	75-100	50-80	20-40	3-20

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
412: Percy, very cobbley-----	5	0-8	Loam	SC, CL-ML, CL, SC-SM	A-4, A-6	0-2	1-5	90-100	85-100	70-95	35-70	20-40	5-15
		8-23	Loam, fine sandy loam, sandy loam	CL, CL-ML	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		23-80	Loam, fine sandy loam, sandy loam	SC, SC-SM, CL, CL-ML	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10
432: Strandquist-----	85	0-8	Loam	SC-SM, CL-ML, CL, SC	A-4, A-6	0	0-3	95-100	95-100	75-90	45-70	20-40	5-20
		8-35	gravelly sand, gravelly coarse sand, very gravelly sand	GP, GP-GM, SP-SM, SP	A-1	0	2-5	35-75	15-55	5-40	0-10	0-20	NP-3
		35-80	Silty clay loam, loam, sandy loam	CL-ML, CL, SC, SC-SM	A-4, A-6	0-1	1-5	95-100	80-100	65-90	35-80	20-40	5-20
Percy, very cobbley-----	5	0-8	Loam	CL, SC, CL- ML, SC-SM	A-4, A-6	0-2	1-5	90-100	85-100	70-95	35-70	20-40	5-15
		8-23	Loam, fine sandy loam, sandy loam	CL-ML, CL	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		23-80	Loam, fine sandy loam, sandy loam	CL, SC-SM, CL-ML, SC	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10
Haug-----	4	0-10	Muck	PT	A-8	0	0	---	---	---	---	---	---
		10-16	Mucky sandy loam, fine sandy loam, loam	SM, OL, CL, ML	A-4, A-6	0-1	0-3	95-100	90-100	70-85	35-65	15-40	1-15
		16-80	Loam, sandy loam, fine sandy loam	CL, ML, SC, SM	A-4, A-6	0-1	1-5	95-100	70-100	60-95	35-65	15-40	1-15

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10						
						inches	inches	4	10	40	200		
		In				Pct	Pct					Pct	
432: Boash-----	3	0-9	Clay loam	CL	A-7	0	0-2	95-100	90-100	80-100	70-95	40-50	20-25
		9-29	Clay, silty clay loam, silty clay	CL, CH	A-7	0	0-2	95-100	90-100	80-100	70-95	45-80	25-50
		29-80	Loam, sandy loam, silt loam	CL-ML, CL	A-4, A-6	0-1	1-5	95-100	85-98	70-95	50-90	24-35	6-15
Foxhome-----	3	0-10	Sandy loam	SM	A-4	0	0-2	95-100	90-100	75-90	35-50	15-30	NP-5
		10-15	Fine sand, loamy fine sand, sand	SM, SW-SM	A-2, A-3	0-1	0-3	95-100	90-100	70-85	5-35	0-25	NP-5
		15-23	gravelly sand, very gravelly coarse sand, very gravelly loamy sand	SP-SM, SP, GP-GM, GP	A-1	0	2-5	30-65	15-45	5-40	0-10	0-20	NP-1
		23-80	Loam, clay loam, silt loam	CL-ML, ML, CL	A-4, A-6	0-1	1-5	90-100	85-100	75-90	50-80	20-40	1-15
433: Syrene, depressional---	85	0-12	Mucky sandy loam	SM, SC, SC-SM	A-4	0	0-3	95-100	85-100	55-70	35-50	15-35	NP-10
		12-18	Loam, sandy loam, sandy clay loam	ML, SM	A-4	0	0-3	95-100	85-100	55-75	35-65	20-40	1-10
		18-80	Stratified gravelly coarse sand to loamy fine sand	SP, SP-SM	A-1, A-2, A-3	0	2-5	75-95	55-85	30-60	0-10	---	NP
Deerwood-----	5	0-14	Muck	PT	A-8	0	0	---	---	---	---	---	---
		14-16	Fine sand, loamy sand, fine sandy loam	SP-SM, SM	A-2, A-4	0	0-5	95-100	90-100	50-75	12-50	0-20	NP-4
		16-80	Fine sand, sand, gravelly sand	SP, SP-SM, SM	A-1, A-2, A-3	0	0-5	75-100	55-100	35-70	1-25	0-14	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
433: Rosewood-----	5	0-11	Fine sandy loam	SC, SC-SM, SM	A-2, A-4	0	0	100	97-100	65-90	30-50	15-30	NP-10
		11-19	Fine sandy loam, loamy fine sand, sandy loam	SM, SC, SC-SM	A-2, A-4	0	0	100	95-100	60-85	25-45	15-30	NP-10
		19-65	Fine sand, sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-95	45-75	5-25	5-15	NP
		65-80	Fine sand, sand, coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-95	40-80	5-35	5-15	NP
Syrene-----	5	0-11	Sandy loam	SC, SC-SM, SM	A-4	0	0-3	95-100	85-100	55-70	35-50	15-35	NP-10
		11-19	Loam, sandy loam, sandy clay loam	SM, ML	A-4	0	0-3	95-100	85-100	55-75	35-65	20-40	1-10
		19-80	Stratified gravelly coarse sand to loamy fine sand	SP, SP-SM	A-1, A-2, A-3	0	2-5	75-95	55-80	30-60	0-10	5-20	NP-5
435: Syrene-----	85	0-11	Sandy loam	SM, SC, SC-SM	A-4	0	0-3	95-100	85-100	55-70	35-50	15-35	NP-10
		11-19	Loam, sandy loam, sandy clay loam	SM, ML	A-4	0	0-3	95-100	85-100	55-75	35-65	20-40	1-10
		19-80	Stratified gravelly coarse sand to loamy fine sand	SP-SM, SP	A-1, A-2, A-3	0	2-5	75-95	55-80	30-60	0-10	5-20	NP-5
Rosewood-----	5	0-11	Fine sandy loam	SC, SC-SM, SM	A-2, A-4	0	0	100	97-100	65-90	30-50	15-30	NP-10
		11-19	Fine sandy loam, loamy fine sand, sandy loam	SM, SC, SC-SM	A-2, A-4	0	0	100	95-100	60-85	25-45	15-30	NP-10
		19-65	Fine sand, sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-95	45-75	5-25	5-15	NP
		65-80	Fine sand, sand, coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-95	40-80	5-35	5-15	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
435: Syrene, depressional---	5	0-12	Mucky sandy loam	SM, SC, SC-SM	A-4	0	0-3	95-100	85-100	55-70	35-50	15-35	NP-10
		12-18	Loam, sandy loam, sandy clay loam	ML, SM	A-4	0	0-3	95-100	85-100	55-75	35-65	20-40	1-10
		18-80	Stratified gravelly coarse sand to loamy fine sand	SP, SP-SM	A-1, A-2, A-3	0	2-5	75-95	55-85	30-60	0-10	---	NP
Karlsruhe-----	3	0-8	Sandy loam	SC, SC-SM, SM	A-4, A-2	0	0	95-100	85-100	60-90	30-65	0-35	NP-15
		8-16	Sandy loam, loamy sand	SM, SC, SC-SM	A-2, A-4, A-1	0	0	95-100	85-100	45-75	10-40	0-35	NP-15
		16-80	Coarse sand, gravelly coarse sand, gravelly sand	GP, GP-GM, SM, SP, SP-SM	A-1, A-2, A-3	0	0-5	45-90	30-80	20-70	0-15	0-20	NP
Deerwood-----	2	0-14	Muck	PT	A-8	0	0	---	---	---	---	---	---
		14-16	Fine sand, loamy sand, fine sandy loam	SP-SM, SM	A-2, A-4	0	0-5	95-100	90-100	50-75	12-50	0-20	NP-4
		16-80	Fine sand, sand, gravelly sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0-5	75-100	55-100	35-70	1-25	0-14	NP
439: Strathcona-----	85	0-10	Fine sandy loam	SM, SC-SM	A-2, A-4	0	0	100	95-100	65-85	30-50	20-30	NP-10
		10-17	Fine sandy loam, sandy loam, loamy fine sand	SM, SC-SM	A-2, A-4	0	0	100	95-100	65-85	15-50	20-30	NP-10
		17-28	Sand, fine sand, loamy fine sand	SM, SP-SM	A-2	0	0-1	95-100	85-100	60-80	10-30	0-14	NP
		28-80	Fine sandy loam, loam, clay loam	CL-ML, CL	A-4, A-6	0-1	1-5	95-100	85-98	70-90	50-70	25-40	5-20

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
439: Northwood-----	5	0-11	Muck	PT	A-8	0	0	---	---	---	---	---	---
		11-16	Fine sandy loam, loamy fine sand, loamy sand	SM, SC-SM	A-2, A-4	0	0-3	95-100	90-100	51-85	15-50	0-35	NP-10
		16-25	Coarse sand, fine sand, loamy fine sand	SM, SP-SM	A-3, A-2	0	0-3	95-100	80-100	70-95	5-35	0-14	NP
		25-80	Loam, clay loam, fine sandy loam	ML, CL, CL-ML	A-4, A-6	0-1	1-5	95-100	90-100	75-100	50-80	20-40	3-20
Percy-----	5	0-10	Loam	SC-SM, SC, CL-ML, CL	A-4, A-6	0-1	0-3	90-100	85-100	70-95	35-70	20-40	5-15
		10-25	Loam, fine sandy loam, sandy loam	CL, CL-ML	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		25-80	Loam, fine sandy loam, sandy loam	SC, CL, SC- SM, CL-ML	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10
Grimstad-----	3	0-10	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	100	80-100	15-50	15-30	NP-7
		10-30	Loamy sand, loamy fine sand, fine sand	SC-SM, SM	A-2, A-3	0	0	100	95-100	80-90	5-35	15-25	NP-10
		30-80	Sandy loam, fine sandy loam, loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0-1	1-3	95-100	85-100	70-90	40-85	15-40	5-20
Strandquist-----	2	0-8	Loam	SC-SM, SC, CL, CL-ML	A-4, A-6	0	0-3	95-100	95-100	75-90	45-70	20-40	5-20
		8-35	gravelly sand, gravelly coarse sand, very gravelly sand	GP-GM, GP, SP-SM, SP	A-1	0	2-5	35-75	15-55	5-40	0-10	0-20	NP-3
		35-80	Silty clay loam, loam, sandy loam	SC-SM, SC, CL, CL-ML	A-4, A-6	0-1	1-5	95-100	80-100	65-90	35-80	20-40	5-20

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
481: Kratka-----	85	0-8	Fine sandy loam	SC-SM, SM	A-4	0	0	95-100	90-100	50-80	36-50	15-25	2-6
		8-22	Loamy sand, sand, loamy fine sand	SW-SM, SP-SM	A-2, A-3	0	0	95-100	90-100	50-80	5-35	0-20	NP-3
		22-80	Loam, clay loam	CL, CL-ML, SC-SM	A-4, A-6	0-1	1-5	95-100	90-100	75-90	50-75	25-40	5-20
Northwood-----	5	0-11	Muck	PT	A-8	0	0	---	---	---	---	---	---
		11-16	Fine sandy loam, loamy fine sand, loamy sand	SM, SC-SM	A-2, A-4	0	0-3	95-100	90-100	51-85	15-50	0-35	NP-10
		16-25	Coarse sand, fine sand, loamy fine sand	SM, SP-SM	A-3, A-2	0	0-3	95-100	80-100	70-95	5-35	0-14	NP
		25-80	Loam, clay loam, fine sandy loam	ML, CL, CL-ML	A-4, A-6	0-1	1-5	95-100	90-100	75-100	50-80	20-40	3-20
Percy-----	5	0-10	Loam	SC, CL-ML, CL, SC-SM	A-4, A-6	0-1	0-3	90-100	85-100	70-95	35-70	20-40	5-15
		10-25	Loam, fine sandy loam, sandy loam	CL, CL-ML	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		25-80	Loam, fine sandy loam, sandy loam	CL, SC, CL- ML, SC-SM	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10
Enstrom-----	3	0-6	Loamy fine sand	SP-SM, SM	A-2	0	0	100	95-100	80-95	10-25	---	NP
		6-29	Fine sand, sand, loamy sand	SM, SP-SM	A-2, A-3	0	0-3	95-100	80-100	50-80	5-30	0-20	NP-3
		29-80	Fine sandy loam, loam, silty clay loam	SC, SC-SM, CL-ML, CL	A-6, A-4	0-1	0-3	90-100	80-95	65-90	35-80	20-40	5-15

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
481: Strandquist-----	2	0-8	Loam	SC-SM, CL-ML, CL, SC	A-4, A-6	0	0-3	95-100	95-100	75-90	45-70	20-40	5-20
		8-35	gravelly sand, gravelly coarse sand, very gravelly sand	SP, SP-SM, GP-GM, GP	A-1	0	2-5	35-75	15-55	5-40	0-10	0-20	NP-3
		35-80	Silty clay loam, loam, sandy loam	SC-SM, SC, CL, CL-ML	A-4, A-6	0-1	1-5	95-100	80-100	65-90	35-80	20-40	5-20
482: Grygla-----	85	0-6	Loamy fine sand	SC-SM, SM	A-2	0	0	100	100	85-95	15-35	15-25	NP-7
		6-26	Sand, fine sand, loamy fine sand	SC-SM, SM, SP-SM	A-2, A-3	0	0-1	95-100	90-100	70-95	5-35	15-20	NP-5
		26-80	Loam, fine sandy loam, silt loam	CL, CL-ML	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20
Chilgren-----	5	0-5	Fine sandy loam	SC-SM, SM, CL-ML, ML	A-2, A-4	0-1	0-3	90-100	85-100	60-85	25-55	15-35	NP-10
		5-9	Loamy sand, loamy fine sand, fine sandy loam	SC-SM, CL-ML, ML, SM	A-2, A-4	0-1	0-3	75-100	70-100	50-85	15-55	15-35	NP-10
		9-16	Clay loam, loam, sandy clay loam	ML, CL, SM, SC	A-4, A-6, A-7	0-1	1-5	75-100	70-100	60-95	35-85	25-50	7-20
		16-80	Loam, sandy loam, fine sandy loam	SM, SC, ML, CL	A-4	0-1	2-5	75-100	70-100	50-90	35-70	20-30	3-10
Grygla, depressiveal---	5	0-5	Mucky loamy fine sand	SC-SM, SM	A-2	0	0	100	100	85-95	15-35	0-25	NP-10
		5-36	Sand, fine sand, loamy fine sand	SP-SM, SC-SM, SM	A-2, A-3	0	0-1	95-100	90-100	70-95	5-35	0-20	NP-5
		36-80	Loam, fine sandy loam, silt loam	CL, CL-ML	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
482: Enstrom-----	3	0-6	Loamy fine sand	SM, SP-SM	A-2	0	0	100	95-100	80-95	10-25	---	NP
		6-29	Fine sand, sand, loamy sand	SM, SP-SM	A-2, A-3	0	0-3	95-100	80-100	50-80	5-30	0-20	NP-3
		29-80	Fine sandy loam, loam, silty clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0-1	0-3	90-100	80-95	65-90	35-80	20-40	5-15
Northwood-----	2	0-11	Muck	PT	A-8	0	0	---	---	---	---	---	---
		11-16	Fine sandy loam, loamy fine sand, loamy sand	SM, SC-SM	A-2, A-4	0	0-3	95-100	90-100	51-85	15-50	0-35	NP-10
		16-25	Coarse sand, fine sand, loamy fine sand	SM, SP-SM	A-3, A-2	0	0-3	95-100	80-100	70-95	5-35	0-14	NP
		25-80	Loam, clay loam, fine sandy loam	ML, CL, CL-ML	A-4, A-6	0-1	1-5	95-100	90-100	75-100	50-80	20-40	3-20
532: Sago-----	90	0-14	Muck	PT	A-8	0	0	---	---	---	---	---	---
		14-80	Stratified fine sand to silt loam	SM, ML, CL, SC	A-2, A-4	0	0	98-100	95-100	70-95	15-85	15-30	2-9
Cathro-----	5	0-8	Muck	PT	A-8	0	0	---	---	---	---	---	---
		8-40	Muck	PT	A-8	0	0	---	---	---	---	---	---
		40-80	Sandy loam, loam, clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0-1	0-5	85-100	75-100	60-100	35-90	20-40	5-20
Zippel-----	5	0-10	Very fine sandy loam	ML, CL-ML	A-4	0	0	100	95-100	85-100	50-75	15-25	NP-5
		10-16	Very fine sand, very fine sandy loam, loamy very fine sand	CL-ML, ML	A-4	0	0	100	95-100	85-100	50-95	15-25	NP-5
		16-80	Stratified silt loam to very fine sand	CL-ML, ML	A-4	0	0	100	95-100	85-100	50-95	15-25	NP-5

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
534:													
Mooselake-----	90	0-16	Mucky peat	PT	A-8	0	1-10	---	---	---	---	---	---
		16-80	Mucky peat	PT	A-8	0	0-10	---	---	---	---	---	---
Bullwinkle-----	0 to 10	0-16	Muck	PT	A-8	0	10-25	---	---	---	---	---	---
		16-48	Muck	PT	A-8	0	10-25	---	---	---	---	---	---
		48-80	Silt loam	CL-ML, CL	A-6, A-4	0-1	0-5	100	95-100	85-100	65-90	25-35	5-15
Dora-----	0 to 10	0-8	Muck	PT	A-8	0	0-5	---	---	---	---	---	---
		8-26	Muck	PT	A-8	0	0-5	---	---	---	---	---	---
		26-80	Silty clay loam, silty clay, clay	CL, CH	A-7	0	0	100	100	90-100	90-100	45-80	35-50
Tawas-----	0 to 10	0-10	Muck	PT	A-8	0	1-10	---	---	---	---	---	---
		10-27	Muck, mucky peat	PT	A-8	0	0-10	---	---	---	---	---	---
		27-80	Fine sand, sand, loamy sand	SP-SM, SP, SM	A-2-4, A-3	0	0	80-100	60-100	50-75	0-20	0-14	NP
540:													
Seelyeville-----	90	0-12	Muck	PT	A-8	0	0	---	---	---	---	---	---
		12-80	Muck, mucky peat	PT	A-8	0	0	---	---	---	---	---	---
Cathro-----	0 to 10	0-8	Muck	PT	A-8	0	0	---	---	---	---	---	---
		8-40	Muck	PT	A-8	0	0	---	---	---	---	---	---
		40-80	Sandy loam, loam, clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0-1	0-5	85-100	75-100	60-100	35-90	20-40	5-20
Dora-----	0 to 10	0-5	Muck	PT	A-8	0	0	---	---	---	---	---	---
		5-31	Muck	PT	A-8	0	0	---	---	---	---	---	---
		31-80	Silty clay loam, silty clay, clay	CH, CL	A-7	0	0	100	100	90-100	90-100	45-80	35-50
Markey-----	0 to 10	0-42	Muck	PT	A-8	0	0	---	---	---	---	---	---
		42-80	Fine sand, loamy sand, coarse sand	SM, SP, SP-SM	A-2, A-3	0	0	100	75-100	60-75	0-20	---	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
541: Rifle-----	90	0-8 8-80	Mucky peat Mucky peat	PT PT	A-8 A-8	0 0	0-10 0-5	--- ---	--- ---	--- ---	--- ---	--- ---	---
Tacoosh-----	10	0-17 17-33 33-80	Mucky peat Mucky peat Silt loam, silty clay loam	PT PT CL-ML, CL	A-8 A-8 A-4, A-6	0 0-5 0	1-10 1-10 0	--- --- 100	--- --- 95-100	--- --- 90-100	--- --- 70-95	--- --- 25-40	--- --- 5-20
543: Markey-----	90	0-42 42-80	Muck Fine sand, loamy sand, coarse sand	PT SP, SM, SP-SM	A-8 A-2, A-3	0 0	0 0	--- 100	--- 75-100	--- 60-75	--- 0-20	--- ---	--- NP
Cormant-----	5	0-6 6-80	Loamy fine sand Fine sand, sand, loamy fine sand	SM, SP-SM SP, SP-SM, SM	A-2, A-3, A-4 A-2, A-3	0 0	0 0	100 100	100 100	80-100 75-100	5-40 1-20	0-14 0-14	NP NP
Seelyeville----	5	0-12 12-80	Muck Muck, mucky peat	PT PT	A-8 A-8	0 0	0 0	--- ---	--- ---	--- ---	--- ---	--- ---	---
544: Cathro-----	90	0-8 8-40 40-80	Muck Muck Sandy loam, loam, clay loam	PT PT SC-SM, SC, CL, CL-ML	A-8 A-8 A-4, A-6	0 0 0-1	0 0 0-5	--- --- 85-100	--- --- 75-100	--- --- 60-100	--- --- 35-90	--- --- 20-40	--- --- 5-20
Percy, very cobbley-----	4	0-8 8-23 23-80	Loam Loam, fine sandy loam, sandy loam Loam, fine sandy loam, sandy loam	SC-SM, CL, CL-ML, SC CL, CL-ML CL, SC, CL- ML, SC-SM	A-4, A-6 A-4 A-4	0-2 0-1 0-1	1-5 1-5 1-5	90-100 85-100 85-100	85-100 85-98 85-98	70-95 55-90 55-90	35-70 35-70 35-70	20-40 20-30 15-30	5-15 5-10 5-10

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
544: Grygla-----	3	0-6	Loamy fine sand	SM, SC-SM	A-2	0	0	100	100	85-95	15-35	15-25	NP-7
		6-26	Sand, fine sand, loamy fine sand	SP-SM, SM, SC-SM	A-2, A-3	0	0-1	95-100	90-100	70-95	5-35	15-20	NP-5
		26-80	Loam, fine sandy loam, silt loam	CL, CL-ML	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20
Seelyeville----	3	0-12	Muck	PT	A-8	0	0	---	---	---	---	---	---
		12-80	Muck, mucky peat	PT	A-8	0	0	---	---	---	---	---	---
546: Lupton-----	90	0-16	Muck	PT	A-8	0	10-30	---	---	---	---	---	---
		16-80	Muck	PT	A-8	0	10-30	---	---	---	---	---	---
Bullwinkle-----	0 to 10	0-16	Muck	PT	A-8	0	10-25	---	---	---	---	---	---
		16-48	Muck	PT	A-8	0	10-25	---	---	---	---	---	---
		48-80	Silt loam	CL, CL-ML	A-6, A-4	0-1	0-5	100	95-100	85-100	65-90	25-35	5-15
Dora-----	0 to 10	0-8	Muck	PT	A-8	0	0-5	---	---	---	---	---	---
		8-26	Muck	PT	A-8	0	0-5	---	---	---	---	---	---
		26-80	Silty clay loam, silty clay, clay	CL, CH	A-7	0	0	100	100	90-100	90-100	45-80	35-50
Tawas-----	0 to 10	0-10	Muck	PT	A-8	0	1-10	---	---	---	---	---	---
		10-27	Muck, mucky peat	PT	A-8	0	0-10	---	---	---	---	---	---
		27-80	Fine sand, sand, loamy sand	SP-SM, SP, SM	A-2-4, A-3	0	0	80-100	60-100	50-75	0-20	0-14	NP
547: Deerwood-----	90	0-14	Muck	PT	A-8	0	0	---	---	---	---	---	---
		14-16	Fine sand, loamy sand, fine sandy loam	SM, SP-SM	A-2, A-4	0	0-5	95-100	90-100	50-75	12-50	0-20	NP-4
		16-80	Fine sand, sand, gravelly sand	SM, SP-SM, SP	A-1, A-2, A-3	0	0-5	75-100	55-100	35-70	1-25	0-14	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
547: Markey-----	4	0-42	Muck	PT	A-8	0	0	---	---	---	---	---	---
		42-80	Fine sand, loamy sand, coarse sand	SM, SP, SP-SM	A-2, A-3	0	0	100	75-100	60-75	0-20	---	NP
Rosewood-----	3	0-11	Fine sandy loam	SC, SC-SM, SM	A-2, A-4	0	0	100	97-100	65-90	30-50	15-30	NP-10
		11-19	Fine sandy loam, loamy fine sand, sandy loam	SM, SC, SC-SM	A-2, A-4	0	0	100	95-100	60-85	25-45	15-30	NP-10
		19-65	Fine sand, sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-95	45-75	5-25	5-15	NP
		65-80	Fine sand, sand, coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-95	40-80	5-35	5-15	NP
Syrene-----	3	0-11	Sandy loam	SC, SC-SM, SM	A-4	0	0-3	95-100	85-100	55-70	35-50	15-35	NP-10
		11-19	Loam, sandy loam, sandy clay loam	SM, ML	A-4	0	0-3	95-100	85-100	55-75	35-65	20-40	1-10
		19-80	Stratified gravelly coarse sand to loamy fine sand	SP, SP-SM	A-1, A-2, A-3	0	2-5	75-95	55-80	30-60	0-10	5-20	NP-5
550: Dora-----	90	0-5	Muck	PT	A-8	0	0	---	---	---	---	---	---
		5-31	Muck	PT	A-8	0	0	---	---	---	---	---	---
		31-80	Silty clay loam, silty clay, clay	CH, CL	A-7	0	0	100	100	90-100	90-100	45-80	35-50
Boash-----	4	0-9	Clay loam	CL	A-7	0	0-2	95-100	90-100	80-100	70-95	40-50	20-25
		9-29	Clay, silty clay loam, silty clay	CH, CL	A-7	0	0-2	95-100	90-100	80-100	70-95	45-80	25-50
		29-80	Loam, sandy loam, silt loam	CL, CL-ML	A-4, A-6	0-1	1-5	95-100	85-98	70-95	50-90	24-35	6-15
Seelyeville-----	3	0-12	Muck	PT	A-8	0	0	---	---	---	---	---	---
		12-80	Muck, mucky peat	PT	A-8	0	0	---	---	---	---	---	---

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
550:													
Woodslake-----	3	0-8	Clay	MH, CH	A-7	0	0	100	98-100	90-100	85-98	50-65	20-35
		8-15	Clay	CH	A-7	0	0	95-100	95-100	90-100	85-100	60-85	35-50
		15-36	Clay	CH	A-7	0	0	95-100	95-100	90-100	85-100	60-85	35-50
		36-80	Clay, silt loam, silty clay loam	CH, CL	A-6, A-7	0	0	100	100	90-100	70-95	40-65	20-40
561:													
Bullwinkle-----	90	0-16	Muck	PT	A-8	0	10-25	---	---	---	---	---	---
		16-48	Muck	PT	A-8	0	10-25	---	---	---	---	---	---
		48-80	Silt loam	CL-ML, CL	A-6, A-4	0-1	0-5	100	95-100	85-100	65-90	25-35	5-15
Lupton-----	4	0-16	Muck	PT	A-8	0	10-30	---	---	---	---	---	---
		16-80	Muck	PT	A-8	0	10-30	---	---	---	---	---	---
Northwood, wooded-----	4	0-15	Muck	PT	A-8	0	0-5	---	---	---	---	---	---
		15-21	Fine sandy loam, loamy fine sand, loamy sand	SM, SC-SM	A-2, A-4	0	0-3	95-100	90-100	51-85	15-50	0-35	NP-10
		21-39	Coarse sand, fine sand, loamy fine sand	SP-SM, SM	A-3, A-2	0	0-3	95-100	80-100	70-95	5-35	0-14	NP
		39-80	Loam, clay loam, fine sandy loam	ML, CL-ML, CL	A-4, A-6	0-1	1-5	95-100	90-100	75-100	50-80	20-40	3-20
Chilgren-----	2	0-5	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0-1	0-3	90-100	85-100	60-85	25-55	15-35	NP-10
		5-9	Loamy sand, loamy fine sand, fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0-1	0-3	75-100	70-100	50-85	15-55	15-35	NP-10
		9-16	Clay loam, loam, sandy clay loam	CL, ML, SM, SC	A-4, A-6, A-7	0-1	1-5	75-100	70-100	60-95	35-85	25-50	7-20
		16-80	Loam, sandy loam, fine sandy loam	SM, SC, ML, CL	A-4	0-1	2-5	75-100	70-100	50-90	35-70	20-30	3-10

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10	4	10	40	200		
						inches	inches						
		In				Pct	Pct					Pct	
563: Northwood-----	90	0-11	Muck	PT	A-8	0	0	---	---	---	---	---	---
		11-16	Fine sandy loam, loamy fine sand, loamy sand	SC-SM, SM	A-2, A-4	0	0-3	95-100	90-100	51-85	15-50	0-35	NP-10
		16-25	Coarse sand, fine sand, loamy fine sand	SP-SM, SM	A-2, A-3	0	0-3	95-100	80-100	70-95	5-35	0-14	NP
		25-80	Loam, clay loam, fine sandy loam	ML, CL, CL-ML	A-4, A-6	0-1	1-5	95-100	90-100	75-100	50-80	20-40	3-20
Grygla-----	4	0-6	Loamy fine sand	SC-SM, SM	A-2	0	0	100	100	85-95	15-35	15-25	NP-7
		6-26	Sand, fine sand, loamy fine sand	SC-SM, SM, SP-SM	A-2, A-3	0	0-1	95-100	90-100	70-95	5-35	15-20	NP-5
		26-80	Loam, fine sandy loam, silt loam	CL, CL-ML	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20
Berner-----	3	0-23	Muck	PT	A-8	0	0	---	---	---	---	---	---
		23-41	Sand, fine sand, loamy fine sand	SP, SM, SP-SM	A-2, A-3	0	0-2	90-100	85-100	60-80	0-25	0-20	NP-3
		41-80	Loam, fine sandy loam, silt loam	CL-ML, CL	A-4, A-6	0-1	1-5	95-100	85-100	60-90	50-80	20-40	5-20
Strandquist-----	3	0-8	Loam	SC-SM, CL-ML, CL, SC	A-4, A-6	0	0-3	95-100	95-100	75-90	45-70	20-40	5-20
		8-35	gravelly sand, gravelly coarse sand, very gravelly sand	SP, SP-SM, GP-GM, GP	A-1	0	2-5	35-75	15-55	5-40	0-10	0-20	NP-3
		35-80	Silty clay loam, loam, sandy loam	SC-SM, SC, CL, CL-ML	A-4, A-6	0-1	1-5	95-100	80-100	65-90	35-80	20-40	5-20

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10	4	10	40	200		
						inches	inches						
		In				Pct	Pct					Pct	
565: Eckvoll-----	85	0-6	Loamy fine sand	SM, SC-SM	A-2, A-4	0	0-2	90-100	85-100	45-80	25-40	15-20	NP-7
		6-21	Fine sand, sand, loamy fine sand	SM, SP-SM	A-1, A-2, A-3	0	0-2	90-100	85-100	45-75	5-30	15-20	NP-4
		21-26	Clay loam, sandy clay loam, loam	SC, CL	A-4, A-6, A-7	0	0-5	90-100	85-98	65-95	45-75	25-50	7-25
		26-80	Loam, clay loam, fine sandy loam	CL, CL-ML	A-4, A-6, A-7	0-1	1-5	90-100	85-98	70-95	50-80	25-45	5-20
Chilgren-----	5	0-5	Fine sandy loam	SM, CL-ML, ML, SC-SM	A-2, A-4	0-1	0-3	90-100	85-100	60-85	25-55	15-35	NP-10
		5-9	Loamy sand, loamy fine sand, fine sandy loam	SC-SM, SM, ML, CL-ML	A-2, A-4	0-1	0-3	75-100	70-100	50-85	15-55	15-35	NP-10
		9-16	Clay loam, loam, sandy clay loam	ML, SM, SC, CL	A-4, A-6, A-7	0-1	1-5	75-100	70-100	60-95	35-85	25-50	7-20
		16-80	Loam, sandy loam, fine sandy loam	CL, SM, SC, ML	A-4	0-1	2-5	75-100	70-100	50-90	35-70	20-30	3-10
Grygla-----	5	0-6	Loamy fine sand	SC-SM, SM	A-2	0	0	100	100	85-95	15-35	15-25	NP-7
		6-26	Sand, fine sand, loamy fine sand	SP-SM, SM, SC-SM	A-2, A-3	0	0-1	95-100	90-100	70-95	5-35	15-20	NP-5
		26-80	Loam, fine sandy loam, silt loam	CL-ML, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20
Hiwood-----	5	0-3	Fine sand	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-95	5-25	---	NP
		3-22	Sand, fine sand, loamy sand	SC-SM, SM	A-3, A-2	0	0	100	95-100	80-95	5-20	---	NP
		22-80	Sand, fine sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	1-12	---	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
568: Zippel-----	85	0-10	Very fine sandy loam	CL-ML, ML	A-4	0	0	100	95-100	85-100	50-75	15-25	NP-5
		10-16	Very fine sand, very fine sandy loam, loamy very fine sand	ML, CL-ML	A-4	0	0	100	95-100	85-100	50-95	15-25	NP-5
		16-80	Stratified silt loam to very fine sand	CL-ML, ML	A-4	0	0	100	95-100	85-100	50-95	15-25	NP-5
Augsburg, depressional---	5	0-9	Mucky very fine sandy loam	ML, OL, CL-ML, CL	A-4, A-6	0	0	100	100	95-100	50-90	15-40	NP-15
		9-16	Loam, very fine sandy loam, silt loam	CL, ML, CL-ML	A-4	0	0	100	100	95-100	80-90	15-35	NP-10
		16-32	Loamy very fine sand, very fine sandy loam, loam	CL-ML, ML, CL	A-4	0	0	100	100	95-100	80-90	15-35	NP-10
		32-80	Silty clay, clay, silty clay loam	CH	A-7	0	0	95-100	95-100	95-100	95-100	50-80	35-55
Sago-----	5	0-14	Muck	PT	A-8	0	0	---	---	---	---	---	---
		14-80	Stratified fine sand to silt loam	SC, CL, ML, SM	A-2, A-4	0	0	98-100	95-100	70-95	15-85	15-30	2-9
Skime-----	5	0-6	Loamy fine sand	SC-SM, SM	A-2	0	0	100	95-100	65-90	15-35	0-20	NP-5
		6-17	Loamy sand, fine sand, loamy fine sand	SC-SM, SM	A-2	0	0	95-100	95-100	45-90	15-35	0-20	NP-5
		17-22	Sandy loam, fine sandy loam	SC-SM, SC	A-2, A-4	0	0	100	100	60-85	30-50	20-30	5-10
		22-72	Fine sand, sand	SM, SP-SM	A-2, A-3	0	0	100	100	50-80	5-35	0-0	NP
		72-80	Stratified fine sand to very fine sandy loam to silt loam	SC-SM, CL-ML, SM	A-2, A-4	0	0	100	100	65-95	15-85	15-30	NP-10

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
569: Wabanica-----	85	0-8	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	95-100	95-100	60-90	25-35	5-15
		8-19	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	85-100	60-95	25-40	5-15
		19-80	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	95-100	85-100	60-95	25-40	5-15
Warroad-----	6	0-11	Fine sandy loam	ML, SM	A-4	0	0	95-100	95-100	70-85	35-55	20-25	NP-5
		11-26	Loamy fine sand, fine sand	SM	A-2	0	0	95-100	95-100	55-80	25-35	---	NP
		26-80	Silt loam, silty clay loam	CL	A-6	0	0	100	95-100	85-100	70-90	25-40	10-15
Sax-----	4	0-15	Muck	PT	A-8	0	0	---	---	---	---	---	---
		15-24	Mucky silt loam, silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
		24-39	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
		39-71	Silt loam, silty clay loam, very fine sandy loam	ML, CL-ML, CL	A-4, A-6	0	0	100	100	90-100	50-90	16-40	NP-15
		71-80	Silty clay loam, silty clay, clay	CL, CH	A-7	0	0	100	100	90-100	75-95	40-80	15-50
Grano-----	3	0-11	Loam	CL-ML, SC-SM	A-4, A-6	0	0	95-100	90-97	65-85	45-65	20-35	5-15
		11-41	Silty clay loam, silty clay, clay	CL, CH	A-7	0	0	95-100	90-97	80-95	70-95	40-80	20-50
		41-80	Clay, silty clay, silty clay loam, stratified silt loam to clay	CH, CL	A-7	0	0	95-100	90-100	80-97	75-95	40-80	20-50

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
569: Enstrom-----	2	0-6	Loamy fine sand	SM, SP-SM	A-2	0	0	100	95-100	80-95	10-25	---	NP
		6-29	Fine sand, sand, loamy sand	SP-SM, SM	A-2, A-3	0	0-3	95-100	80-100	50-80	5-30	0-20	NP-3
		29-80	Fine sandy loam, loam, silty clay loam	SC-SM, CL, CL-ML, SC	A-4, A-6	0-1	0-3	90-100	80-95	65-90	35-80	20-40	5-15
570: Faunce-----	85	0-2	Loamy fine sand	SM, SP-SM	A-2	0	0	95-100	80-100	65-90	10-35	---	NP
		2-14	Sand, fine sand, loamy sand	SM, SP-SM	A-2, A-3	0	0	95-100	80-100	55-80	0-20	0-20	NP-3
		14-24	gravelly loamy coarse sand, sand, gravelly sandy loam	SP-SM, SM	A-2, A-3	0	0-2	95-100	65-100	55-80	0-20	0-20	NP-3
		24-80	Stratified coarse sand to gravelly sand	SP-SM, SP	A-1, A-2, A-3	0-1	0-2	75-90	50-85	40-65	0-10	---	NP
Clearriver-----	7	0-2	Loamy fine sand	SM, SP-SM	A-2	0	0	95-100	85-100	40-90	10-35	15-25	NP-10
		2-21	Sand, loamy sand	SM, SP-SM	A-2, A-3	0	0	95-100	85-100	55-90	5-35	---	NP
		21-80	Stratified fine sand to gravelly coarse sand	SP, SP-SM	A-1, A-2, A-3	0	0-2	75-100	65-85	40-65	0-10	---	NP
Zimmerman-----	4	0-6	Fine sand	SM, SP-SM	A-2	0	0	100	95-100	95-100	10-20	15-20	NP
		6-80	Fine sand, loamy fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	60-100	5-20	0-20	NP-5
Meehan-----	3	0-8	Loamy sand	SM	A-1, A-2	0	0	90-100	75-100	40-90	15-30	0-14	NP
		8-31	Sand, loamy sand, loamy coarse sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0	90-100	75-100	40-90	3-30	0-14	NP
		31-80	Sand, coarse sand	SP-SM, SP	A-1, A-2, A-3	0	0	90-100	75-100	40-90	0-5	0-14	NP
Pits, gravel----	1	---	---	---	---	---	---	---	---	---	---	---	---

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
581: Percy-----	90	0-11	Fine sandy loam	SC, SC-SM	A-4	0	0-1	90-100	85-100	60-85	30-55	20-30	5-10
		11-15	Loam, fine sandy loam,	CL, CL-ML	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		15-60	Loam, fine sandy loam,	CL, CL-ML, SC, SC-SM	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10
Haug-----	5	0-10	Muck	PT	A-8	0	0	---	---	---	---	---	---
		10-16	Mucky sandy loam, fine sandy loam,	ML, SM, CL, OL	A-4, A-6	0-1	0-3	95-100	90-100	70-85	35-65	15-40	1-15
		16-80	Loam, sandy loam, fine sandy loam	SM, CL, ML, SC	A-4, A-6	0-1	1-5	95-100	70-100	60-95	35-65	15-40	1-15
Boash-----	3	0-9	Clay loam	CL	A-7	0	0-2	95-100	90-100	80-100	70-95	40-50	20-25
		9-29	Clay, silty clay loam,	CH, CL	A-7	0	0-2	95-100	90-100	80-100	70-95	45-80	25-50
		29-80	Loam, sandy loam, silt loam	CL-ML, CL	A-4, A-6	0-1	1-5	95-100	85-98	70-95	50-90	24-35	6-15
Skagen-----	2	0-9	Loam	CL, CL-ML, ML	A-4	0-1	0-3	95-100	85-100	75-95	55-75	20-30	NP-10
		9-19	Loam, fine sandy loam, sandy loam	CL-ML, SC-SM	A-4	0-2	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		19-80	Loam, fine sandy loam, sandy loam	CL-ML, SC-SM	A-4	0-2	1-5	85-100	85-98	55-90	35-70	20-30	5-10
582: Roliss-----	85	0-14	Loam	CL, CL-ML	A-4, A-6	0-1	0-3	95-100	80-100	80-100	60-90	20-40	5-20
		14-20	Loam, clay loam, silty clay loam	CL	A-6, A-7	0-1	1-5	95-100	80-100	80-90	60-80	20-50	10-30
		20-80	Loam, clay loam	CL, CL-ML	A-4, A-6, A-7	0-1	1-5	95-100	80-100	80-95	60-80	20-50	5-30
Roliss, depressional---	7	0-8	Loam	CL, CL-ML	A-4, A-6	0-1	0-1	95-100	80-100	80-100	60-90	20-40	5-20
		8-13	Loam, clay loam, silty clay loam	CL	A-6, A-7	0-1	1-5	95-100	80-100	80-90	60-80	20-50	10-30
		13-80	Loam, clay loam	CL, CL-ML	A-4, A-6, A-7	0-1	1-5	95-100	80-98	80-95	60-80	20-50	5-30

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
582: Boash-----	5	0-9	Clay loam	CL	A-7	0	0-2	95-100	90-100	80-100	70-95	40-50	20-25
		9-29	Clay, silty clay loam, silty clay	CL, CH	A-7	0	0-2	95-100	90-100	80-100	70-95	45-80	25-50
		29-80	Loam, sandy loam, silt loam	CL, CL-ML	A-4, A-6	0-1	1-5	95-100	85-98	70-95	50-90	24-35	6-15
Haug-----	3	0-10	Muck	PT	A-8	0	0	---	---	---	---	---	---
		10-16	Mucky sandy loam, fine sandy loam, loam	SM, ML, CL, OL	A-4, A-6	0-1	0-3	95-100	90-100	70-85	35-65	15-40	1-15
		16-80	Loam, sandy loam, fine sandy loam	SC, ML, CL, SM	A-4, A-6	0-1	1-5	95-100	70-100	60-95	35-65	15-40	1-15
583: Nereson-----	85	0-7	Fine sandy loam	SM	A-4	0-1	0-3	90-100	80-98	50-70	35-50	15-20	NP-4
		7-11	Loam, fine sandy loam, sandy loam	SC-SM, SC, CL, CL-ML	A-4	0	0-5	90-100	80-98	55-90	40-60	20-28	5-10
		11-29	Sandy loam, loam, gravelly loam	SM, CL-ML, CL, ML, SC- SM	A-4	0-1	1-5	85-95	75-95	45-85	10-55	15-30	NP-10
		29-80	Sandy loam, loam, gravelly loam	CL-ML, SM, SC-SM, CL, ML	A-4	0-1	1-5	85-95	75-95	45-85	10-55	15-30	NP-10
Percy-----	10	0-10	Loam	SC, SC-SM, CL, CL-ML	A-4, A-6	0-1	0-3	90-100	85-100	70-95	35-70	20-40	5-15
		10-25	Loam, fine sandy loam, sandy loam	CL-ML, CL	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		25-80	Loam, fine sandy loam, sandy loam	SC-SM, CL-ML, CL, SC	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
						Pct	Pct					Pct	
583: Pelan-----	3	0-6	Sandy loam	SM, SC-SM	A-2, A-4	0	0-3	95-100	75-100	55-90	30-50	0-20	NP-5
		6-12	Very gravelly sandy loam, very gravelly sandy clay loam	SC, GC, SM, GM	A-1, A-2	0	2-5	45-85	25-50	10-45	5-35	20-30	NP-10
		12-24	Very gravelly coarse sand, very gravelly fine sandy loam	SP, GP, GP- GM, SP-SM	A-1, A-2	0	2-5	40-85	25-50	5-50	1-10	0-14	NP
		24-60	Fine sandy loam, sandy loam, loam	SC, CL, ML, SM	A-4, A-6	0-1	1-5	90-100	85-95	60-90	40-65	10-30	1-15
Foxhome-----	2	0-10	Sandy loam	SM	A-4	0	0-2	95-100	90-100	75-90	35-50	15-30	NP-5
		10-15	Fine sand, loamy fine sand, sand	SW-SM, SM	A-2, A-3	0-1	0-3	95-100	90-100	70-85	5-35	0-25	NP-5
		15-23	gravelly sand, very gravelly coarse sand, very gravelly loamy sand	SP, SP-SM, GP-GM, GP	A-1	0	2-5	30-65	15-45	5-40	0-10	0-20	NP-1
		23-80	Loam, clay loam, silt loam	CL, CL-ML, ML	A-4, A-6	0-1	1-5	90-100	85-100	75-90	50-80	20-40	1-15
627: Tawas-----	90	0-10	Muck	PT	A-8	0	1-10	---	---	---	---	---	---
		10-27	Muck, mucky peat	PT	A-8	0	0-10	---	---	---	---	---	---
		27-80	Fine sand, sand, loamy sand	SM, SP, SP-SM	A-2-4, A-3	0	0	80-100	60-100	50-75	0-20	0-14	NP
Leafriver-----	4	0-10	Muck	PT	A-8	0	0-5	---	---	---	---	---	---
		10-13	Loamy sand, sandy loam, fine sand	SM	A-2-4, A-4	0	0	100	95-100	55-80	15-40	15-20	NP-4
		13-80	Loamy sand, fine sand, sand	SM, SP-SM, SP	A-1-b, A-2, A-2-4, A-3	0	0	95-100	80-100	45-70	3-35	---	NP
Lupton-----	4	0-16	Muck	PT	A-8	0	10-30	---	---	---	---	---	---
		16-80	Muck	PT	A-8	0	10-30	---	---	---	---	---	---

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
627: Cormant-----	2	0-6	Loamy fine sand	SM, SP-SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
		6-80	Fine sand, sand, loamy fine sand	SP, SM, SP-SM	A-2, A-3	0	0	100	100	75-100	1-20	0-14	NP
630: Wildwood-----	90	0-12	Muck	PT	A-8	0	0	---	---	---	---	---	---
		12-33	Clay, silty clay, silty clay loam	CH	A-7	0	0	100	100	95-100	85-98	75-90	50-65
		33-80	Clay, silty clay	CH	A-7	0	0	100	85-100	85-100	60-95	65-90	40-65
Boash-----	4	0-9	Clay loam	CL	A-7	0	0-2	95-100	90-100	80-100	70-95	40-50	20-25
		9-29	Clay, silty clay loam, silty clay	CH, CL	A-7	0	0-2	95-100	90-100	80-100	70-95	45-80	25-50
		29-80	Loam, sandy loam, silt loam	CL, CL-ML	A-4, A-6	0-1	1-5	95-100	85-98	70-95	50-90	24-35	6-15
Dora-----	4	0-5	Muck	PT	A-8	0	0	---	---	---	---	---	---
		5-31	Muck	PT	A-8	0	0	---	---	---	---	---	---
		31-80	Silty clay loam, silty clay, clay	CL, CH	A-7	0	0	100	100	90-100	90-100	45-80	35-50
Espelie-----	2	0-10	Fine sandy loam	SM, SC, ML	A-2, A-4	0	0	95-100	85-100	60-85	30-65	15-25	NP-8
		10-27	Loamy sand, loamy fine sand, fine sand	SP-SM, SM	A-2, A-4	0	0-2	85-100	60-100	30-80	10-40	10-20	NP-4
		27-80	Clay, silty clay, clay loam	CH, CL	A-7	0	0	90-100	85-100	80-100	70-100	40-65	20-40

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
643: Huot-----	85	0-14	Fine sandy loam	SM, SC-SM	A-4	0	0	90-100	75-100	50-85	25-55	15-30	NP-8
		14-26	Loamy fine sand, fine sandy loam	SM, SC-SM	A-2, A-4	0	0	90-100	75-100	60-85	25-55	15-30	NP-8
		26-34	Loamy fine sand, fine sand	SP-SM, SM	A-2	0	0	90-100	75-100	50-80	10-35	0-20	NP
		34-80	Clay, silty clay, silty clay loam	CH	A-7	0	0-1	95-100	85-100	85-100	70-95	60-80	35-50
Thiefriver-----	12	0-10	Fine sandy loam	ML, SM	A-4	0	0	95-100	80-100	70-90	35-55	15-30	NP-10
		10-16	Loamy fine sand, fine sandy loam, loamy sand	SM, SC-SM, CL-ML, ML	A-2, A-4	0	0	95-100	80-100	60-90	10-55	15-30	NP-10
		16-35	Fine sand, loamy fine sand, loamy sand	SM, SP-SM	A-3, A-2	0	0-2	90-100	80-100	50-80	5-35	---	NP
		35-80	Clay, silty clay, silty clay loam	CL, CH	A-7	0	0	100	95-100	95-100	90-100	40-70	20-40
Redby-----	3	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	SM, SW-SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
644: Boash-----	85	0-9	Clay loam	CL	A-7	0	0-2	95-100	90-100	80-100	70-95	40-50	20-25
		9-29	Clay, silty clay loam, silty clay	CH, CL	A-7	0	0-2	95-100	90-100	80-100	70-95	45-80	25-50
		29-80	Loam, sandy loam, silt loam	CL, CL-ML	A-4, A-6	0-1	1-5	95-100	85-98	70-95	50-90	24-35	6-15
Percy-----	7	0-10	Loam	CL, SC-SM, SC, CL-ML	A-4, A-6	0-1	0-3	90-100	85-100	70-95	35-70	20-40	5-15
		10-25	Loam, fine sandy loam, sandy loam	CL-ML, CL	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		25-80	Loam, fine sandy loam, sandy loam	SC, CL-ML, CL, SC-SM	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
644: Woodslake-----	5	0-8	Clay	CH, MH	A-7	0	0	100	98-100	90-100	85-98	50-65	20-35
		8-15	Clay	CH	A-7	0	0	95-100	95-100	90-100	85-100	60-85	35-50
		15-36	Clay	CH	A-7	0	0	95-100	95-100	90-100	85-100	60-85	35-50
		36-80	Clay, silty loam, silty clay loam	CL, CH	A-6, A-7	0	0	100	100	90-100	70-95	40-65	20-40
Strandquist-----	3	0-8	Loam	CL-ML, CL, SC, SC-SM	A-4, A-6	0	0-3	95-100	95-100	75-90	45-70	20-40	5-20
		8-35	gravelly sand, gravelly coarse sand, very gravelly sand	SP, GP, GP- GM, SP-SM	A-1	0	2-5	35-75	15-55	5-40	0-10	0-20	NP-3
		35-80	Silty clay loam, loam, sandy loam	CL-ML, CL, SC, SC-SM	A-4, A-6	0-1	1-5	95-100	80-100	65-90	35-80	20-40	5-20
645: Espelie-----	85	0-10	Fine sandy loam	ML, SM, SC	A-2, A-4	0	0	95-100	85-100	60-85	30-65	15-25	NP-8
		10-27	Loamy sand, loamy fine sand, fine sand	SM, SP-SM	A-2, A-4	0	0-2	85-100	60-100	30-80	10-40	10-20	NP-4
		27-80	Clay, silty clay, clay loam	CH, CL	A-7	0	0	90-100	85-100	80-100	70-100	40-65	20-40
Grano-----	5	0-11	Loam	CL-ML, SC-SM	A-4, A-6	0	0	95-100	90-97	65-85	45-65	20-35	5-15
		11-41	Silty clay loam, silty clay, clay	CL, CH	A-7	0	0	95-100	90-97	80-95	70-95	40-80	20-50
		41-80	Clay, silty clay, silty clay loam, stratified silt loam to clay	CH, CL	A-7	0	0	95-100	90-100	80-97	75-95	40-80	20-50

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
645: Hilaire-----	5	0-13	Fine sandy loam	SM, SC, CL, ML	A-4, A-2	0	0	90-100	75-100	50-85	30-55	15-25	NP-8
		13-33	Loamy sand, loamy fine sand, sand	SP-SM, SM	A-1, A-2, A-4	0	0-2	85-100	75-100	45-85	10-40	15-20	NP-4
		33-80	Clay, silty clay, silty clay loam	CH, CL	A-7	0	0	95-100	85-100	75-95	65-90	40-70	20-45
Wildwood-----	5	0-12	Muck	PT	A-8	0	0	---	---	---	---	---	---
		12-33	Clay, silty clay, silty clay loam	CH	A-7	0	0	100	100	95-100	85-98	75-90	50-65
		33-80	Clay, silty clay	CH	A-7	0	0	100	85-100	85-100	60-95	65-90	40-65
651: Thiefriver-----	85	0-10	Fine sandy loam	ML, SM	A-4	0	0	95-100	80-100	70-90	35-55	15-30	NP-10
		10-16	Loamy fine sand, fine sandy loam, loamy sand	ML, SM, SC- SM, CL-ML	A-2, A-4	0	0	95-100	80-100	60-90	10-55	15-30	NP-10
		16-35	Fine sand, loamy fine sand, loamy sand	SM, SP-SM	A-3, A-2	0	0-2	90-100	80-100	50-80	5-35	---	NP
		35-80	Clay, silty clay, silty clay loam	CL, CH	A-7	0	0	100	95-100	95-100	90-100	40-70	20-40
Grano-----	5	0-11	Loam	CL-ML, SC-SM	A-4, A-6	0	0	95-100	90-97	65-85	45-65	20-35	5-15
		11-41	Silty clay loam, silty clay, clay	CL, CH	A-7	0	0	95-100	90-97	80-95	70-95	40-80	20-50
		41-80	Clay, silty clay, silty clay loam, stratified silt loam to clay	CH, CL	A-7	0	0	95-100	90-100	80-97	75-95	40-80	20-50

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
651:													
Huot-----	5	0-14	Fine sandy loam	SC-SM, SM	A-4	0	0	90-100	75-100	50-85	25-55	15-30	NP-8
		14-26	Loamy fine sand, fine sandy loam	SM, SC-SM	A-2, A-4	0	0	90-100	75-100	60-85	25-55	15-30	NP-8
		26-34	Loamy fine sand, fine sand	SP-SM, SM	A-2	0	0	90-100	75-100	50-80	10-35	0-20	NP
		34-80	Clay, silty clay, silty clay loam	CH	A-7	0	0-1	95-100	85-100	85-100	70-95	60-80	35-50
Wildwood-----	5	0-12	Muck	PT	A-8	0	0	---	---	---	---	---	---
		12-33	Clay, silty clay, silty clay loam	CH	A-7	0	0	100	100	95-100	85-98	75-90	50-65
		33-80	Clay, silty clay	CH	A-7	0	0	100	85-100	85-100	60-95	65-90	40-65
708:													
Rushlake-----	85	0-8	Loamy sand	SP-SM, SM	A-1-b, A-2-4	0	0	95-100	75-100	15-60	10-35	---	NP
		8-80	gravelly sand, gravelly loamy sand, sand	SP-SM, SP	A-1-b, A-3	0	0-10	55-95	50-90	15-60	2-10	---	NP
Corliss-----	6	0-8	Loamy sand	SM, SP-SM	A-1-b, A-2-4	0	0-5	85-100	80-100	40-70	10-25	15-21	NP-4
		8-80	Stratified very gravelly sand to sand	SP	A-1-b	0	0-5	75-95	25-85	10-60	1-15	0-0	NP
Redby-----	5	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	SW-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
Hangaard-----	3	0-12	Sandy loam	SM	A-2, A-4	0	0-3	95-100	80-100	50-75	20-45	---	NP
		12-80	Stratified gravelly coarse sand, gravelly sand, coarse sand	SP-SM, SP	A-1, A-2, A-3	0	0-3	70-95	55-90	30-60	0-10	---	NP
Pits, gravel----	1	---	---	---	---	---	---	---	---	---	---	---	---

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
712: Rosewood-----	85	0-11	Fine sandy loam	SC, SM, SC-SM	A-2, A-4	0	0	100	97-100	65-90	30-50	15-30	NP-10
		11-19	Fine sandy loam, loamy fine sand, sandy loam	SC, SC-SM, SM	A-2, A-4	0	0	100	95-100	60-85	25-45	15-30	NP-10
		19-65	Fine sand, sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-95	45-75	5-25	5-15	NP
		65-80	Fine sand, sand, coarse sand	SP-SM, SM	A-1, A-2, A-3	0	0	85-100	75-95	40-80	5-35	5-15	NP
Deerwood-----	6	0-14	Muck	PT	A-8	0	0	---	---	---	---	---	---
		14-16	Fine sand, loamy sand, fine sandy loam	SM, SP-SM	A-2, A-4	0	0-5	95-100	90-100	50-75	12-50	0-20	NP-4
		16-80	Fine sand, sand, gravelly sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0-5	75-100	55-100	35-70	1-25	0-14	NP
Hangaard-----	5	0-12	Sandy loam	SM	A-2, A-4	0	0-3	95-100	80-100	50-75	20-45	---	NP
		12-80	Stratified gravelly coarse sand, gravelly sand, coarse sand	SP-SM, SP	A-1, A-2, A-3	0	0-3	70-95	55-90	30-60	0-10	---	NP
Ulen-----	4	0-10	Fine sandy loam	SM, SC, SC-SM	A-4	0	0	100	100	80-100	35-50	0-25	NP-8
		10-16	Loamy fine sand, fine sand	SM	A-2	0	0	95-100	95-100	70-95	12-35	0-14	NP
		16-67	Fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-35	0-14	NP
		67-80	Very fine sandy loam, fine sandy loam	SM, ML, SC- SM, CL-ML	A-4	0	0	100	95-100	70-95	35-60	20-30	NP-10
721B: Corliss-----	85	0-8	Loamy sand	SP-SM, SM	A-1-b, A-2-4	0	0-5	85-100	80-100	40-70	10-25	15-21	NP-4
		8-80	Stratified very gravelly sand to sand	SP	A-1-b	0	0-5	75-95	25-85	10-60	1-15	0-0	NP
Rushlake-----	10	0-8	Loamy sand	SM, SP-SM	A-1-b, A-2-4	0	0	95-100	75-100	15-60	10-35	---	NP
		8-80	gravelly sand, gravelly loamy sand, sand	SP, SP-SM	A-1-b, A-3	0	0-10	55-95	50-90	15-60	2-10	---	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10						
						inches	inches	4	10	40	200		
		In				Pct	Pct					Pct	
721B: Hangaard-----	4	0-12	Sandy loam	SM	A-2, A-4	0	0-3	95-100	80-100	50-75	20-45	---	NP
		12-80	Stratified gravelly coarse sand, gravelly sand, coarse sand	SP, SP-SM	A-1, A-2, A-3	0	0-3	70-95	55-90	30-60	0-10	---	NP
Pits, gravel----	1	---	---	---	---	---	---	---	---	---	---	---	---
733: Berner-----	90	0-23	Muck	PT	A-8	0	0	---	---	---	---	---	---
		23-41	Sand, fine sand, loamy fine sand	SP, SM, SP-SM	A-2, A-3	0	0-2	90-100	85-100	60-80	0-25	0-20	NP-3
		41-80	Loam, fine sandy loam, silt loam	CL-ML, CL	A-4, A-6	0-1	1-5	95-100	85-100	60-90	50-80	20-40	5-20
Grygla-----	5	0-6	Loamy fine sand	SM, SC-SM	A-2	0	0	100	100	85-95	15-35	15-25	NP-7
		6-26	Sand, fine sand, loamy fine sand	SM, SC-SM, SP-SM	A-2, A-3	0	0-1	95-100	90-100	70-95	5-35	15-20	NP-5
		26-80	Loam, fine sandy loam, silt loam	CL, CL-ML	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20
Seelyeville-----	5	0-12	Muck	PT	A-8	0	0	---	---	---	---	---	---
		12-80	Muck, mucky peat	PT	A-8	0	0	---	---	---	---	---	---
737: Mahkonce-----	85	0-3	Fine sandy loam	SC, SC-SM, CL-ML	A-4, A-6	0-1	0-3	95-100	90-98	65-85	45-65	25-35	5-15
		3-5	Fine sandy loam, loam, silt loam	CL, CL-ML	A-4, A-6	0	0-3	95-100	90-98	65-90	50-80	20-40	5-20
		5-16	Silty clay, clay	CH	A-7	0	0-5	95-100	90-98	75-95	70-90	50-65	25-40
		16-23	Clay loam, silty clay loam, clay	CL	A-6, A-7	0	0-5	95-100	95-98	75-95	60-90	35-50	15-25
		23-80	Loam, clay loam, silty clay loam	CL	A-6, A-7	0-1	1-5	95-100	90-98	75-95	60-90	35-50	15-25

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
737: Auganaush-----	10	0-5	Loam	CL-ML, CL	A-4, A-6	0	0-3	95-100	85-95	85-95	60-90	20-40	5-15
		5-7	Loam, fine sandy loam, silt loam	CL-ML, ML, SC-SM, SM	A-4	0	0-3	95-100	85-95	75-90	40-70	15-30	NP-10
		7-18	Clay, clay loam, silty clay loam	CL, CH	A-7	0	0-3	95-100	85-95	85-95	70-90	45-70	25-45
		18-58	Clay loam, silty clay loam, silty clay	CH, CL	A-6, A-7	0-1	1-5	95-100	85-95	80-95	60-90	35-55	15-30
		58-80	Loam, clay loam, silty clay loam	CL-ML, CL	A-6, A-7	0-1	1-5	90-100	85-95	60-90	55-85	25-45	5-20
Eckvoll-----	5	0-6	Loamy fine sand	SM, SC-SM	A-2, A-4	0	0-2	90-100	85-100	45-80	25-40	15-20	NP-7
		6-21	Fine sand, sand, loamy fine sand	SM, SP-SM	A-1, A-2, A-3	0	0-2	90-100	85-100	45-75	5-30	15-20	NP-4
		21-26	Clay loam, sandy clay loam, loam	SC, CL	A-4, A-6, A-7	0	0-5	90-100	85-98	65-95	45-75	25-50	7-25
		26-80	Loam, clay loam, fine sandy loam	CL, CL-ML	A-4, A-6, A-7	0-1	1-5	90-100	85-98	70-95	50-80	25-45	5-20
755: Woodslake-----	85	0-8	Clay	MH, CH	A-7	0	0	100	98-100	90-100	85-98	50-65	20-35
		8-15	Clay	CH	A-7	0	0	95-100	95-100	90-100	85-100	60-85	35-50
		15-36	Clay	CH	A-7	0	0	95-100	95-100	90-100	85-100	60-85	35-50
		36-80	Clay, silt loam, silty clay loam	CH, CL	A-6, A-7	0	0	100	100	90-100	70-95	40-65	20-40
Boash-----	8	0-9	Clay loam	CL	A-7	0	0-2	95-100	90-100	80-100	70-95	40-50	20-25
		9-29	Clay, silty clay loam, silty clay	CH, CL	A-7	0	0-2	95-100	90-100	80-100	70-95	45-80	25-50
		29-80	Loam, sandy loam, silt loam	CL, CL-ML	A-4, A-6	0-1	1-5	95-100	85-98	70-95	50-90	24-35	6-15

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
755: Wildwood-----	5	0-12	Muck	PT	A-8	0	0	---	---	---	---	---	---
		12-33	Clay, silty clay, silty clay loam	CH	A-7	0	0	100	100	95-100	85-98	75-90	50-65
		33-80	Clay, silty clay	CH	A-7	0	0	100	85-100	85-100	60-95	65-90	40-65
Dora-----	2	0-5	Muck	PT	A-8	0	0	---	---	---	---	---	---
		5-31	Muck	PT	A-8	0	0	---	---	---	---	---	---
		31-80	Silty clay loam, silty clay, clay	CH, CL	A-7	0	0	100	100	90-100	90-100	45-80	35-50
767: Auganaush-----	90	0-5	Loam	CL, CL-ML	A-4, A-6	0	0-3	95-100	85-95	85-95	60-90	20-40	5-15
		5-7	Loam, fine sandy loam, silt loam	SM, ML, CL- ML, SC-SM	A-4	0	0-3	95-100	85-95	75-90	40-70	15-30	NP-10
		7-18	Clay, clay loam, silty clay loam	CH, CL	A-7	0	0-3	95-100	85-95	85-95	70-90	45-70	25-45
		18-58	Clay loam, silty clay loam, silty clay	CH, CL	A-6, A-7	0-1	1-5	95-100	85-95	80-95	60-90	35-55	15-30
		58-80	Loam, clay loam, silty clay loam	CL, CL-ML	A-6, A-7	0-1	1-5	90-100	85-95	60-90	55-85	25-45	5-20
Mustinka-----	5	0-9	Clay loam	CL, CH	A-7	0	0	100	100	90-100	70-95	40-52	20-30
		9-35	Silty clay, silty clay loam, clay	CL, CH	A-7	0	0	100	100	90-100	75-95	47-72	25-44
		35-62	Silty clay loam, clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	85-100	70-95	31-47	12-25
		62-80	Clay loam, silty clay loam, loam	CL	A-6, A-7	0-1	1-5	95-100	85-98	75-95	50-90	31-47	12-25

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
767: Wildwood-----	3	0-12	Muck	PT	A-8	0	0	---	---	---	---	---	---
		12-33	Clay, silty clay, silty clay loam	CH	A-7	0	0	100	100	95-100	85-98	75-90	50-65
		33-80	Clay, silty clay	CH	A-7	0	0	100	85-100	85-100	60-95	65-90	40-65
Mahkonce-----	2	0-3	Fine sandy loam	SC, CL-ML, SC-SM	A-4, A-6	0-1	0-3	95-100	90-98	65-85	45-65	25-35	5-15
		3-5	Fine sandy loam, loam, silt loam	CL, CL-ML	A-4, A-6	0	0-3	95-100	90-98	65-90	50-80	20-40	5-20
		5-16	Silty clay, clay	CH	A-7	0	0-5	95-100	90-98	75-95	70-90	50-65	25-40
		16-23	Clay loam, silty clay loam, clay	CL	A-6, A-7	0	0-5	95-100	95-98	75-95	60-90	35-50	15-25
		23-80	Loam, clay loam, silty clay loam	CL	A-6, A-7	0-1	1-5	95-100	90-98	75-95	60-90	35-50	15-25
794: Clearriver-----	85	0-2	Loamy fine sand	SM, SP-SM	A-2	0	0	95-100	85-100	40-90	10-35	15-25	NP-10
		2-21	Sand, loamy sand	SP-SM, SM	A-2, A-3	0	0	95-100	85-100	55-90	5-35	---	NP
		21-80	Stratified fine sand to gravelly coarse sand	SP-SM, SP	A-1, A-2, A-3	0	0-2	75-100	65-85	40-65	0-10	---	NP
Hiwood-----	7	0-3	Fine sand	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-95	5-25	---	NP
		3-22	Sand, fine sand, loamy sand	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-95	5-20	---	NP
		22-80	Sand, fine sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	1-12	---	NP
Meehan-----	5	0-8	Loamy sand	SM	A-1, A-2	0	0	90-100	75-100	40-90	15-30	0-14	NP
		8-31	Sand, loamy sand, loamy coarse sand	SM, SP-SM, SP	A-1, A-2, A-3	0	0	90-100	75-100	40-90	3-30	0-14	NP
		31-80	Sand, coarse sand	SP, SP-SM	A-1, A-2, A-3	0	0	90-100	75-100	40-90	0-5	0-14	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
794:													
Faunce-----	3	0-2	Loamy fine sand	SM, SP-SM	A-2	0	0	95-100	80-100	65-90	10-35	---	NP
		2-14	Sand, fine sand, loamy sand	SM, SP-SM	A-2, A-3	0	0	95-100	80-100	55-80	0-20	0-20	NP-3
		14-24	gravelly loamy coarse sand, sand, gravelly sandy loam	SM, SP-SM	A-2, A-3	0	0-2	95-100	65-100	55-80	0-20	0-20	NP-3
		24-80	Stratified coarse sand to gravelly sand	SP-SM, SP	A-1, A-2, A-3	0-1	0-2	75-90	50-85	40-65	0-10	---	NP
1002:													
Fluvaquents, frequently flooded-----	90	0-12	Fine sandy loam	SM, SC-SM	A-2-4, A-4	0	0	100	90-100	50-85	20-55	0-30	NP-10
		12-80	Stratified loamy sand to silt loam	CL, SM, SC, ML	A-1, A-3, A-4, A-6	0	0	95-100	70-100	35-95	5-80	0-40	NP-15
Seelyeville-----	6	0-18	Muck	PT	A-8	0	0	---	---	---	---	---	---
		18-80	Mucky peat, muck	PT	A-8	0	0	---	---	---	---	---	---
Hapludalfs-----	2	0-6	Fine sandy loam	SC-SM, CL-ML	A-4	0	0-3	95-100	85-100	70-85	35-55	20-30	5-10
		6-8	Fine sand, loamy fine sand, fine sandy loam	SM, ML	A-2, A-4	0	0-3	95-100	85-100	70-90	30-50	15-25	NP-5
		8-25	Loam, clay loam, silty clay loam	CL, CL-ML	A-6	0	0-5	95-100	85-100	85-100	50-95	25-40	5-20
		25-80	Fine sandy loam, loam, silt loam	CL-ML, CL, SC	A-4, A-6	0-1	0-5	95-100	85-100	70-100	35-90	20-35	5-15
Water-----	2	---	---	---	---	---	---	---	---	---	---	---	---
1030:													
Pits, gravel----	75	---	---	---	---	---	---	---	---	---	---	---	---
Udipsamments----	20	0-14	Sand	SP-SM, SM	A-2	0	0	95-100	85-100	75-90	10-35	---	NP
		14-60	Sand, fine sand	SW-SM, SM	A-2, A-3	0	0	95-100	85-100	50-75	5-25	0-20	NP-3
		60-80	Coarse sand, gravelly coarse sand	SP-SM, SP, SW-SM	A-1, A-2	0	0	75-100	65-85	40-65	0-10	0-20	NP-3

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1030: Corliss-----	2	0-8 8-80	Loamy sand Stratified very gravelly sand to sand	SM, SP-SM SP	A-1-b, A-2-4 A-1-b	0 0	0-5 0-5	85-100 75-95	80-100 25-85	40-70 10-60	10-25 1-15	15-21 0-0	NP-4 NP
Karlstad-----	2	0-7 7-10	Loamy sand Coarse sandy loam, sandy loam, fine sandy loam	SM, SP-SM SC, SC-SM, SM	A-2, A-3 A-2, A-4	0-5 0-5	0-5 0-5	95-100 95-100	95-100 95-100	75-95 75-95	5-35 12-50	15-25 15-25	NP-4 NP-10
		10-14	gravelly coarse sandy loam, gravelly sandy loam, gravelly fine sandy loam	SW-SM, SC-SM, SM, SC	A-1, A-2	0-5	0-25	65-95	50-75	25-50	10-30	15-25	NP-10
		14-80	Stratified gravelly coarse sand to loamy fine sand	SP-SM, SP	A-1, A-2	0-5	0-25	60-100	35-100	20-80	0-55	0-20	NP-3
Hangaard-----	1	0-12 12-80	Sandy loam Stratified gravelly coarse sand, gravelly sand, coarse sand	SM SP-SM, SP	A-2, A-4 A-1, A-2, A-3	0 0	0-3 0-3	95-100 70-95	80-100 55-90	50-75 30-60	20-45 0-10	--- ---	NP NP
1031: Seelyeville, ponded-----	90	0-18 18-80	Muck Mucky peat, muck	PT PT	A-8 A-8	0 0	0 0	--- ---	--- ---	--- ---	--- ---	--- ---	---
Cathro-----	0 to 10	0-8 8-40 40-80	Muck Muck Sandy loam, loam, clay loam	PT PT CL, CL-ML, SC, SC-SM	A-8 A-8 A-4, A-6	0 0 0-1	0 0 0-5	--- --- 85-100	--- --- 75-100	--- --- 60-100	--- --- 35-90	--- --- 20-40	--- --- 5-20
Dora-----	0 to 10	0-5 5-31 31-80	Muck Muck Silty clay loam, silty clay, clay	PT PT CH, CL	A-8 A-8 A-7	0 0 0	0 0 0	--- --- 100	--- --- 100	--- --- 90-100	--- --- 90-100	--- --- 45-80	--- --- 35-50

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1031: Markey-----	0 to 10	0-42	Muck	PT	A-8	0	0	---	---	---	---	---	---
		42-80	Fine sand, loamy sand, coarse sand	SM, SP, SP-SM	A-2, A-3	0	0	100	75-100	60-75	0-20	---	NP
1067: Fluvaquents, frequently flooded-----	60	0-11	Fine sandy loam	SM, SC-SM	A-2-4, A-4	0	0	100	90-100	50-85	20-55	0-30	NP-10
		11-80	Stratified loamy sand to silt loam	CL, SM, SC, ML	A-1, A-3, A-4, A-6	0	0	95-100	70-100	35-95	5-80	0-40	NP-15
Hapludalfs-----	30	0-6	Fine sandy loam	CL-ML, SC-SM	A-4	0	0-3	95-100	85-100	70-85	35-55	20-30	5-10
		6-8	Fine sand, loamy fine sand, fine sandy loam	ML, SM	A-2, A-4	0	0-3	95-100	85-100	70-90	30-50	15-25	NP-5
		8-25	Loam, clay	CL, CL-ML	A-6	0	0-5	95-100	85-100	85-100	50-95	25-40	5-20
		25-80	Loam, silty clay loam	CL-ML, CL, SC	A-4, A-6	0-1	0-5	95-100	85-100	70-100	35-90	20-35	5-15
			Fine sandy loam, loam, silt loam										
Seelyeville-----	5	0-18	Muck	PT	A-8	0	0	---	---	---	---	---	---
		18-80	Mucky peat, muck	PT	A-8	0	0	---	---	---	---	---	---
Water-----	5	---	---	---	---	---	---	---	---	---	---	---	---
1133B: Skime-----	85	0-6	Loamy fine sand	SC-SM, SM	A-2	0	0	100	95-100	65-90	15-35	0-20	NP-5
		6-17	Loamy fine sand, fine sand, loamy sand	SM, SC-SM	A-2	0	0	95-100	95-100	45-90	15-35	0-20	NP-5
		17-22	Fine sandy loam, sandy loam	SC, SC-SM	A-2, A-4	0	0	100	100	60-85	30-50	20-30	5-10
		22-72	Sand, fine sand	SP-SM, SM	A-2, A-3	0	0	100	100	50-80	5-35	0-0	NP
		72-80	Stratified fine sand to very fine sandy loam to silt loam	SC-SM, CL-ML, SM	A-2, A-4	0	0	100	100	65-95	15-85	15-30	NP-10

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1133B:													
Hiwood-----	10	0-3	Fine sand	SC-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-25	---	NP
		3-22	Sand, fine sand, loamy sand	SC-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-20	---	NP
		22-80	Sand, fine sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	1-12	---	NP
Zippel-----	5	0-10	Very fine sandy loam	ML, CL-ML	A-4	0	0	100	95-100	85-100	50-75	15-25	NP-5
		10-16	Very fine sand, very fine sandy loam, loamy very fine sand	CL-ML, ML	A-4	0	0	100	95-100	85-100	50-95	15-25	NP-5
		16-80	Stratified silt loam to very fine sand	ML, CL-ML	A-4	0	0	100	95-100	85-100	50-95	15-25	NP-5
1134:													
Borup-----	55	0-9	Loam	ML	A-4	0	0	100	100	95-100	70-95	20-34	NP-7
		9-34	Very fine sandy loam, silt loam	ML	A-4	0	0	100	100	90-100	60-95	0-30	NP-5
		34-80	Loamy very fine sand, very fine sand, very fine sandy loam	ML	A-4	0	0	100	100	85-100	50-90	0-30	NP-5
Glyndon-----	35	0-7	Very fine sandy loam	ML	A-4	0	0	100	100	95-100	70-95	20-30	NP-5
		7-80	Silt loam, very fine sandy loam, loam	CL-ML, CL, ML	A-4	0	0	100	100	90-100	85-95	20-30	NP-10

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10	4	10	40	200		
						inches	inches						
		In				Pct	Pct					Pct	
1134: Augsburg, depressional---	5	0-9	Mucky very fine sandy loam	OL, ML, CL- ML, CL	A-4, A-6	0	0	100	100	95-100	50-90	15-40	NP-15
		9-16	Loam, very fine sandy loam, silt loam	ML, CL-ML, CL	A-4	0	0	100	100	95-100	80-90	15-35	NP-10
		16-32	Loamy very fine sand, very fine sandy loam, loam	CL, CL-ML, ML	A-4	0	0	100	100	95-100	80-90	15-35	NP-10
		32-80	Silty clay, clay, silty clay loam	CH	A-7	0	0	95-100	95-100	95-100	95-100	50-80	35-55
Skime-----	5	0-6	Loamy fine sand	SC-SM, SM	A-2	0	0	100	95-100	65-90	15-35	0-20	NP-5
		6-17	Fine sand, loamy sand, loamy fine sand	SM, SC-SM	A-2	0	0	95-100	95-100	45-90	15-35	0-20	NP-5
		17-22	Fine sandy loam, sandy loam	SC-SM, SC	A-2, A-4	0	0	100	100	60-85	30-50	20-30	5-10
		22-72	Fine sand, sand	SM, SP-SM	A-2, A-3	0	0	100	100	50-80	5-35	0-0	NP
		72-80	Stratified fine sand to very fine sandy loam to silt loam	SM, SC-SM, CL-ML	A-2, A-4	0	0	100	100	65-95	15-85	15-30	NP-10
1144: Strathcona, depressional---	0 to 90	0-12	Mucky fine sandy loam	SM, SC-SM	A-4	0	0	100	95-100	65-85	30-50	0-25	NP-10
		12-18	Fine sandy loam, sandy loam	SC-SM, SM	A-2, A-4	0	0-2	100	95-100	65-85	15-50	20-30	NP-10
		18-39	Sand, fine sand, loamy fine sand	SP-SM, SM	A-2	0	0-2	95-100	85-100	60-80	10-30	0-14	NP
		39-80	Fine sandy loam, loam, clay loam	CL, CL-ML	A-4, A-6	0-1	1-5	95-100	85-98	70-90	50-70	25-40	5-20

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1144: Kratka, depressional---	0 to 90	0-9	Mucky fine sandy loam	SM, SC-SM	A-2-4, A-4	0	0	95-100	90-100	50-80	20-50	0-25	NP-5
		9-26	Loamy sand, loamy fine sand, sand	SM, SP-SM, SW-SM	A-2, A-3	0	0-2	95-100	90-100	50-80	5-35	0-20	NP-3
		26-80	Loam, clay loam, sandy loam	SC-SM, CL, SC, CL-ML	A-4, A-6	0-1	1-5	95-100	90-100	70-90	40-60	20-45	5-20
Kratka-----	5	0-8	Fine sandy loam	SC-SM, SM	A-4	0	0	95-100	90-100	50-80	36-50	15-25	2-6
		8-22	Loamy sand, sand, loamy fine sand	SP-SM, SW-SM	A-2, A-3	0	0	95-100	90-100	50-80	5-35	0-20	NP-3
		22-80	Loam, clay loam	CL, CL-ML, SC-SM	A-4, A-6	0-1	1-5	95-100	90-100	75-90	50-75	25-40	5-20
Northwood-----	5	0-11	Muck	PT	A-8	0	0	---	---	---	---	---	---
		11-16	Fine sandy loam, loamy fine sand, loamy sand	SM, SC-SM	A-2, A-4	0	0-3	95-100	90-100	51-85	15-50	0-35	NP-10
		16-25	Coarse sand, fine sand, loamy fine sand	SM, SP-SM	A-3, A-2	0	0-3	95-100	80-100	70-95	5-35	0-14	NP
		25-80	Loam, clay loam, fine sandy loam	ML, CL, CL-ML	A-4, A-6	0-1	1-5	95-100	90-100	75-100	50-80	20-40	3-20

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10	4	10	40	200		
						inches	inches						
		In				Pct	Pct					Pct	
1154: Sax-----	90	0-15	Muck	PT	A-8	0	0	---	---	---	---	---	---
		15-24	Mucky silt loam, silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
		24-39	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
		39-71	Silt loam, silty clay loam, very fine sandy loam	ML, CL-ML, CL	A-4, A-6	0	0	100	100	90-100	50-90	16-40	NP-15
		71-80	Silty clay loam, silty clay, clay	CH, CL	A-7	0	0	100	100	90-100	75-95	40-80	15-50
Wabanica-----	5	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	60-90	25-35	5-15
		8-19	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	85-100	60-95	25-40	5-15
		19-80	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	85-100	60-95	25-40	5-15
Cathro-----	3	0-8	Muck	PT	A-8	0	0	---	---	---	---	---	---
		8-40	Muck	PT	A-8	0	0	---	---	---	---	---	---
		40-80	Sandy loam, loam, clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0-1	0-5	85-100	75-100	60-100	35-90	20-40	5-20
Woodslake-----	2	0-8	Clay	CH, MH	A-7	0	0	100	98-100	90-100	85-98	50-65	20-35
		8-15	Clay	CH	A-7	0	0	95-100	95-100	90-100	85-100	60-85	35-50
		15-36	Clay	CH	A-7	0	0	95-100	95-100	90-100	85-100	60-85	35-50
		36-80	Clay, silt loam, silty clay loam	CH, CL	A-6, A-7	0	0	100	100	90-100	70-95	40-65	20-40

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1158: Skagen-----	85	0-9	Loam	ML, CL, CL-ML	A-4	0-1	0-3	95-100	85-100	75-95	55-75	20-30	NP-10
		9-19	Loam, fine sandy loam, sandy loam	CL-ML, SC-SM	A-4	0-2	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		19-80	Loam, fine sandy loam, sandy loam	SC-SM, CL-ML	A-4	0-2	1-5	85-100	85-98	55-90	35-70	20-30	5-10
Percy-----	10	0-10	Loam	CL-ML, CL, SC-SM, SC	A-4, A-6	0-1	0-3	90-100	85-100	70-95	35-70	20-40	5-15
		10-25	Loam, fine sandy loam, sandy loam	CL, CL-ML	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		25-80	Loam, fine sandy loam, sandy loam	CL, SC, CL- ML, SC-SM	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10
Foxhome-----	5	0-10	Sandy loam	SM	A-4	0	0-2	95-100	90-100	75-90	35-50	15-30	NP-5
		10-15	Fine sand, loamy fine sand, sand	SW-SM, SM	A-2, A-3	0-1	0-3	95-100	90-100	70-85	5-35	0-25	NP-5
		15-23	gravelly sand, very gravelly coarse sand, very gravelly loamy sand	SP-SM, SP, GP-GM, GP	A-1	0	2-5	30-65	15-45	5-40	0-10	0-20	NP-1
		23-80	Loam, clay loam, silt loam	CL, ML, CL-ML	A-4, A-6	0-1	1-5	90-100	85-100	75-90	50-80	20-40	1-15
1170: Skagen, very cobbly-----	85	0-10	Loam	CL, ML, CL-ML	A-4	0-2	1-5	95-100	85-100	75-95	55-75	20-30	NP-10
		10-28	Loam, fine sandy loam, sandy loam	SC-SM, CL-ML	A-4	0	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		28-80	Loam, fine sandy loam, sandy loam	CL-ML, SC-SM	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10						
						inches	inches	4	10	40	200		
		In				Pct	Pct					Pct	
1170: Percy, very cobbly-----	10	0-8	Loam	SC-SM, CL, SC, CL-ML	A-4, A-6	0-2	1-5	90-100	85-100	70-95	35-70	20-40	5-15
		8-23	Loam, fine sandy loam, sandy loam	CL, CL-ML	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		23-80	Loam, fine sandy loam, sandy loam	CL, SC-SM, CL-ML, SC	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10
Foxhome-----	5	0-10	Sandy loam	SM	A-4	0	0-2	95-100	90-100	75-90	35-50	15-30	NP-5
		10-15	Fine sand, loamy fine sand, sand	SW-SM, SM	A-3, A-2	0-1	0-3	95-100	90-100	70-85	5-35	0-25	NP-5
		15-23	gravelly sand, very gravelly coarse sand, very gravelly loamy sand	SP-SM, SP, GP-GM, GP	A-1	0	2-5	30-65	15-45	5-40	0-10	0-20	NP-1
		23-80	Loam, clay loam, silt loam	ML, CL, CL-ML	A-4, A-6	0-1	1-5	90-100	85-100	75-90	50-80	20-40	1-15
1179B: Moranville-----	85	0-8	Loamy fine sand	SM	A-2	0	0	100	100	65-80	15-35	15-20	NP-5
		8-24	Fine sand, loamy fine sand	SM	A-2, A-4	0	0	100	100	75-90	15-50	10-15	NP
		24-42	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-95	35-45	15-20
		42-80	Very fine sandy loam, silt loam, silty clay loam	CL-ML, CL, ML	A-4, A-6, A-7	0	0	100	95-100	80-100	50-95	20-45	5-15

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1179B: Baudette-----	5	0-8	Fine sandy loam	ML, SM	A-4	0	0	100	100	75-95	40-60	15-25	NP-4
		8-10	Very fine sandy loam, fine sandy loam, silt loam	ML, SM	A-4	0	0	100	100	75-100	40-90	15-40	NP-10
		10-30	Clay loam, silt loam, silty clay loam	CL, ML, CL-ML	A-4, A-6, A-7	0	0	100	100	95-100	80-100	20-50	5-20
		30-80	Silt loam, very fine sandy loam, loamy very fine sand	ML	A-4	0	0	100	100	95-100	70-100	20-40	1-10
Hiwood-----	5	0-3	Fine sand	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-95	5-25	---	NP
		3-22	Sand, fine sand, loamy sand	SC-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-20	---	NP
		22-80	Sand, fine sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	1-12	---	NP
Spooner-----	5	0-6	Very fine sandy loam	ML, SM	A-4	0	0	100	100	90-100	35-55	20-40	1-10
		6-15	Loamy very fine sand, very fine sandy loam, loam	ML, SC, SM, CL	A-4, A-6	0	0	100	100	90-100	35-60	10-40	1-15
		15-22	Loam, silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
		22-60	Very fine sandy loam, silt loam, sandy loam	CL, ML, SC, SM	A-4, A-6	0	0	100	100	90-100	35-95	16-40	NP-15
1181: Rosewood-----	50	0-8	Fine sandy loam	SM, SC, SC-SM	A-2, A-4	0	0	100	97-100	65-90	30-50	15-30	NP-10
		8-15	Fine sandy loam, loamy fine sand, sandy loam	SM, SC, SC-SM	A-2, A-4	0	0	100	95-100	60-85	25-45	15-30	NP-10
		15-80	Fine sand, sand	SP-SM, SM	A-1, A-2, A-3	0	0	85-100	75-95	45-75	5-25	5-15	NP
Ulen-----	40	0-10	Fine sandy loam	SC-SM, SC, SM	A-4	0	0	100	100	80-100	35-50	0-25	NP-8
		10-18	Loamy fine sand, fine sand	SM	A-2	0	0	95-100	95-100	70-95	12-35	0-14	NP
		18-80	Fine sand	SP-SM, SM	A-2, A-3	0	0	100	95-100	80-100	5-35	0-14	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1181: Redby-----	5	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	SM, SW-SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
Deerwood-----	3	0-14	Muck	PT	A-8	0	0	---	---	---	---	---	---
		14-16	Fine sand, loamy sand, fine sandy loam	SP-SM, SM	A-2, A-4	0	0-5	95-100	90-100	50-75	12-50	0-20	NP-4
		16-80	Fine sand, sand, gravelly sand	SP-SM, SM, SP	A-1, A-2, A-3	0	0-5	75-100	55-100	35-70	1-25	0-14	NP
Syrene-----	2	0-11	Sandy loam	SC, SC-SM, SM	A-4	0	0-3	95-100	85-100	55-70	35-50	15-35	NP-10
		11-19	Loam, sandy loam, sandy clay loam	SM, ML	A-4	0	0-3	95-100	85-100	55-75	35-65	20-40	1-10
		19-80	Stratified gravelly coarse sand to loamy fine sand	SP, SP-SM	A-1, A-2, A-3	0	2-5	75-95	55-80	30-60	0-10	5-20	NP-5
1182: Warroad-----	85	0-11	Fine sandy loam	ML, SM	A-4	0	0	95-100	95-100	70-85	35-55	20-25	NP-5
		11-26	Loamy fine sand, fine sand	SM	A-2	0	0	95-100	95-100	55-80	25-35	---	NP
		26-80	Silt loam, silty clay loam	CL	A-6	0	0	100	95-100	85-100	70-90	25-40	10-15
Wabanica-----	7	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	60-90	25-35	5-15
		8-19	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	95-100	85-100	60-95	25-40	5-15
		19-80	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	95-100	85-100	60-95	25-40	5-15

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1182: Enstrom-----	5	0-6	Loamy fine sand	SP-SM, SM	A-2	0	0	100	95-100	80-95	10-25	---	NP
		6-29	Fine sand, sand, loamy sand	SP-SM, SM	A-2, A-3	0	0-3	95-100	80-100	50-80	5-30	0-20	NP-3
		29-80	Fine sandy loam, loam, silty clay loam	SC-SM, CL-ML, SC, CL	A-4, A-6	0-1	0-3	90-100	80-95	65-90	35-80	20-40	5-15
Sax-----	3	0-15	Muck	PT	A-8	0	0	---	---	---	---	---	---
		15-24	Mucky silt loam, silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
		24-39	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
		39-71	Silt loam, silty clay loam, very fine sandy loam	ML, CL-ML, CL	A-4, A-6	0	0	100	100	90-100	50-90	16-40	NP-15
		71-80	Silty clay loam, silty clay, clay	CL, CH	A-7	0	0	100	100	90-100	75-95	40-80	15-50
1187: Dora, ponded----	90	0-24	Muck	PT	A-8	0	0	---	---	---	---	---	---
		24-30	Mucky silt loam, mucky silty clay loam	CL, CH	A-7-6	0	0	100	100	90-100	75-95	40-55	20-35
		30-80	Silty clay loam, silty clay, clay	CH, CL	A-7-6	0	0	100	100	90-100	75-95	45-75	30-50
Seelyeville, ponded-----	4	0-18	Muck	PT	A-8	0	0	---	---	---	---	---	---
		18-80	Mucky peat, muck	PT	A-8	0	0	---	---	---	---	---	---

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10	4	10	40	200		
						inches	inches						
		In				Pct	Pct					Pct	
1187: Wildwood-----	4	0-12	Muck	PT	A-8	0	0	---	---	---	---	---	---
		12-33	Clay, silty clay, silty clay loam	CH	A-7	0	0	100	100	95-100	85-98	75-90	50-65
		33-80	Clay, silty clay	CH	A-7	0	0	100	85-100	85-100	60-95	65-90	40-65
Boash-----	2	0-9	Clay loam	CL	A-7	0	0-2	95-100	90-100	80-100	70-95	40-50	20-25
		9-29	Clay, silty clay loam, silty clay	CL, CH	A-7	0	0-2	95-100	90-100	80-100	70-95	45-80	25-50
		29-80	Loam, sandy loam, silt loam	CL-ML, CL	A-4, A-6	0-1	1-5	95-100	85-98	70-95	50-90	24-35	6-15
1191: Sahkahtay-----	85	0-4	Sandy loam	SM	A-2, A-4	0	0	85-100	80-100	55-85	25-40	15-25	NP-10
		4-8	Sand, loamy sand	SM, SP-SM	A-2	0	0	85-100	80-100	50-85	5-25	0-14	NP
		8-14	gravelly sandy loam, sandy clay loam, loam	SC, CL	A-6	0	0-5	80-100	75-98	50-85	40-60	30-40	10-20
		14-80	Loamy sand, sand, gravelly coarse sand	SM, SW-SM, SW	A-1, A-2-4	0	0-5	55-90	50-85	15-60	2-20	0-14	NP
Cormant-----	5	0-6	Loamy fine sand	SM, SP-SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
		6-80	Fine sand, sand, loamy fine sand	SP-SM, SP, SM	A-2, A-3	0	0	100	100	75-100	1-20	0-14	NP
Deerwood-----	5	0-14	Muck	PT	A-8	0	0	---	---	---	---	---	---
		14-16	Fine sand, loamy sand, fine sandy loam	SM, SP-SM	A-2, A-4	0	0-5	95-100	90-100	50-75	12-50	0-20	NP-4
		16-80	Fine sand, sand, gravelly sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0-5	75-100	55-100	35-70	1-25	0-14	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1191:													
Karlstad-----	3	0-7	Loamy sand	SM, SP-SM	A-2, A-3	0-5	0-5	95-100	95-100	75-95	5-35	15-25	NP-4
		7-10	Coarse sandy loam, sandy loam, fine sandy loam	SC, SC-SM, SM	A-2, A-4	0-5	0-5	95-100	95-100	75-95	12-50	15-25	NP-10
		10-14	gravelly coarse sandy loam, gravelly sandy loam, gravelly fine sandy loam	SW-SM, SC-SM, SM, SC	A-1, A-2	0-5	0-25	65-95	50-75	25-50	10-30	15-25	NP-10
		14-80	Stratified gravelly coarse sand to loamy fine sand	SP-SM, SP	A-1, A-2	0-5	0-25	60-100	35-100	20-80	0-55	0-20	NP-3
Redby-----	2	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	SM, SW-SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
1206:													
Cormant-----	55	0-7	Loamy fine sand	SM, SP-SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
		7-80	Fine sand, sand, loamy fine sand	SP-SM, SM, SP	A-2, A-3	0	0	100	100	75-100	1-20	0-14	NP
Redby-----	35	0-4	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		4-30	Fine sand, sand	SW-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		30-80	Fine sand, sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
Hiwood-----	5	0-3	Fine sand	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-95	5-25	---	NP
		3-22	Sand, fine sand, loamy sand	SC-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-20	---	NP
		22-80	Sand, fine sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	1-12	---	NP
Leafriver-----	5	0-13	Muck	PT	A-8	0	0	---	---	---	---	---	---
		13-80	Loamy sand, fine sand, sand	SP, SP-SM, SM	A-1-b, A-2, A-2-4, A-3	0	0	95-100	80-100	45-70	3-35	---	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10	4	10	40	200		
						inches	inches						
		In				Pct	Pct					Pct	
1214: Mustinka-----	90	0-9	Clay loam	CH, CL	A-7	0	0	100	100	90-100	70-95	40-52	20-30
		9-35	Silty clay, silty clay loam, clay	CH, CL	A-7	0	0	100	100	90-100	75-95	47-72	25-44
		35-62	Silty clay loam, clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	85-100	70-95	31-47	12-25
		62-80	Clay loam, silty clay loam, loam	CL	A-6, A-7	0-1	1-5	95-100	85-98	75-95	50-90	31-47	12-25
Espelie-----	4	0-10	Fine sandy loam	SM, ML, SC	A-2, A-4	0	0	95-100	85-100	60-85	30-65	15-25	NP-8
		10-27	Loamy sand, loamy fine sand, fine sand	SM, SP-SM	A-2, A-4	0	0-2	85-100	60-100	30-80	10-40	10-20	NP-4
		27-80	Clay, silty clay, clay loam	CL, CH	A-7	0	0	90-100	85-100	80-100	70-100	40-65	20-40
Wildwood-----	4	0-12	Muck	PT	A-8	0	0	---	---	---	---	---	---
		12-33	Clay, silty clay, silty clay loam	CH	A-7	0	0	100	100	95-100	85-98	75-90	50-65
		33-80	Clay, silty clay	CH	A-7	0	0	100	85-100	85-100	60-95	65-90	40-65
Dalbo-----	2	0-15	Loam	ML, CL	A-4, A-6	0	0	100	100	95-100	60-100	30-40	5-15
		15-23	Clay, silty clay, silty clay loam	CH, CL	A-7	0	0	100	100	85-100	75-95	40-65	20-40
		23-80	Silty clay loam, silty clay, clay	CH, CL	A-6, A-7	0	0	100	95-100	85-100	65-95	40-65	20-40
1274B: Redby-----	40	0-10	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		10-35	Fine sand, sand	SP-SM, SM	A-2, A-3	0	0	100	95-100	60-95	5-30	0-20	NP-3
		35-80	Sand, fine sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1274B: Hiwood-----	30	0-7	Loamy fine sand	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-95	5-25	---	NP
		7-32	Loamy sand, fine sand, sand	SM, SC-SM	A-2, A-3	0	0	100	95-100	80-95	5-20	---	NP
		32-80	Sand, fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	60-95	5-30	0-20	NP-3
Leafriver, wooded-----	15	0-10	Muck	PT	A-8	0	0	---	---	---	---	---	---
		10-13	Loamy sand, sandy loam	SM	A-2, A-4	0	0	100	95-100	55-80	15-40	15-20	NP-4
		13-80	Loamy sand, fine sand, sand	SM, SP, SP-SM	A-1-b, A-2, A-3, A-2-4	0	0	95-100	80-100	45-70	3-35	---	NP
Clearriver-----	5	0-2	Loamy fine sand	SP-SM, SM	A-2	0	0	95-100	85-100	40-90	10-35	15-25	NP-10
		2-21	Sand, loamy sand	SM, SP-SM	A-2, A-3	0	0	95-100	85-100	55-90	5-35	---	NP
		21-80	Stratified fine sand to gravelly coarse sand	SP, SP-SM	A-1, A-2, A-3	0	0-2	75-100	65-85	40-65	0-10	---	NP
Cormant-----	5	0-6	Loamy fine sand	SM, SP-SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
		6-80	Fine sand, sand, loamy fine sand	SP, SP-SM, SM	A-2, A-3	0	0	100	100	75-100	1-20	0-14	NP
Zimmerman-----	5	0-6	Fine sand	SP-SM, SM	A-2	0	0	100	95-100	95-100	10-20	15-20	NP
		6-80	Fine sand, loamy fine sand	SP-SM, SM	A-2, A-3	0	0	100	95-100	60-100	5-20	0-20	NP-5
1298: Borup-----	90	0-8	Silt loam	ML	A-4	0	0	100	100	95-100	70-95	20-34	NP-7
		8-80	Very fine sandy loam, silt loam	ML	A-4	0	0	100	100	90-100	60-95	0-30	NP-5

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10						
						inches	inches	4	10	40	200		
		In				Pct	Pct					Pct	
1298: Augsburg, depressional---	3	0-9	Mucky very fine sandy loam	OL, ML, CL- ML, CL	A-4, A-6	0	0	100	100	95-100	50-90	15-40	NP-15
		9-16	Loam, very fine sandy loam, silt loam	ML, CL-ML, CL	A-4	0	0	100	100	95-100	80-90	15-35	NP-10
		16-32	Loamy very fine sand, very fine sandy loam, loam	ML, CL, CL-ML	A-4	0	0	100	100	95-100	80-90	15-35	NP-10
		32-80	Silty clay, clay, silty clay loam	CH	A-7	0	0	95-100	95-100	95-100	95-100	50-80	35-55
Glyndon-----	3	0-7	Very fine sandy loam	ML	A-4	0	0	100	100	95-100	70-95	20-30	NP-5
		7-80	Silt loam, very fine sandy loam, loam	ML, CL-ML, CL	A-4	0	0	100	100	90-100	85-95	20-30	NP-10
Sago-----	2	0-14	Muck	PT	A-8	0	0	---	---	---	---	---	---
		14-80	Stratified fine sand to silt loam	SC, CL, ML, SM	A-4, A-2	0	0	98-100	95-100	70-95	15-85	15-30	2-9
Skime-----	2	0-6	Loamy fine sand	SC-SM, SM	A-2	0	0	100	95-100	65-90	15-35	0-20	NP-5
		6-17	Fine sand, loamy sand, loamy fine sand	SM, SC-SM	A-2	0	0	95-100	95-100	45-90	15-35	0-20	NP-5
		17-22	Sandy loam, fine sandy loam	SC, SC-SM	A-2, A-4	0	0	100	100	60-85	30-50	20-30	5-10
		22-72	Sand, fine sand	SP-SM, SM	A-2, A-3	0	0	100	100	50-80	5-35	0-0	NP
		72-80	Stratified fine sand to very fine sandy loam to silt loam	SC-SM, CL-ML, SM	A-2, A-4	0	0	100	100	65-95	15-85	15-30	NP-10

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1302: Foldahl-----	85	0-12	Fine sandy loam	ML, SM	A-4	0	0	100	95-100	70-85	35-60	15-20	NP-4
		12-30	Fine sand, loamy fine sand, sand	SP-SM, SM	A-2, A-3	0-1	0-3	95-100	90-100	60-85	5-35	0-15	NP-3
		30-80	Loam, clay loam, sandy loam	CL, CL-ML, SC-SM	A-4, A-6	0-1	1-5	95-100	75-95	70-90	50-85	15-40	5-20
Kratka-----	10	0-8	Fine sandy loam	SC-SM, SM	A-4	0	0	95-100	90-100	50-80	36-50	15-25	2-6
		8-22	Loamy sand, sand, loamy fine sand	SP-SM, SW-SM	A-2, A-3	0	0	95-100	90-100	50-80	5-35	0-20	NP-3
		22-80	Loam, clay loam	CL, CL-ML, SC-SM	A-4, A-6	0-1	1-5	95-100	90-100	75-90	50-75	25-40	5-20
Foxhome-----	5	0-10	Sandy loam	SM	A-4	0	0-2	95-100	90-100	75-90	35-50	15-30	NP-5
		10-15	Fine sand, loamy fine sand, sand	SW-SM, SM	A-2, A-3	0-1	0-3	95-100	90-100	70-85	5-35	0-25	NP-5
		15-23	gravelly sand, very gravelly coarse sand, very gravelly loamy sand	SP-SM, SP, GP-GM, GP	A-1	0	2-5	30-65	15-45	5-40	0-10	0-20	NP-1
		23-80	Loam, clay loam, silt loam	CL-ML, CL, ML	A-4, A-6	0-1	1-5	90-100	85-100	75-90	50-80	20-40	1-15
1304: Glyndon-----	85	0-11	Very fine sandy loam	ML	A-4	0	0	100	100	95-100	70-95	20-30	NP-5
		11-56	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	90-100	85-95	20-30	NP-10
		56-80	Very fine sandy loam, silt loam	SM, SC, CL, ML	A-4	0	0	100	100	85-100	35-75	10-30	NP-10
Borup-----	10	0-8	Silt loam	ML	A-4	0	0	100	100	95-100	70-95	20-34	NP-7
		8-80	Very fine sandy loam, silt loam	ML	A-4	0	0	100	100	90-100	60-95	0-30	NP-5

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10	4	10	40	200		
						inches	inches						
		In				Pct	Pct					Pct	
1304: Skime-----	5	0-6	Loamy fine sand	SC-SM, SM	A-2	0	0	100	95-100	65-90	15-35	0-20	NP-5
		6-17	Loamy sand, loamy fine sand, fine sand	SC-SM, SM	A-2	0	0	95-100	95-100	45-90	15-35	0-20	NP-5
		17-22	Sandy loam, fine sandy loam	SC, SC-SM	A-2, A-4	0	0	100	100	60-85	30-50	20-30	5-10
		22-72	Sand, fine sand	SM, SP-SM	A-2, A-3	0	0	100	100	50-80	5-35	0-0	NP
		72-80	Stratified fine sand to very fine sandy loam to silt loam	SC-SM, CL-ML, SM	A-2, A-4	0	0	100	100	65-95	15-85	15-30	NP-10
1305: Hilaire-----	85	0-13	Fine sandy loam	ML, SC, SM, CL	A-4, A-2	0	0	90-100	75-100	50-85	30-55	15-25	NP-8
		13-33	Loamy sand, loamy fine sand, sand	SP-SM, SM	A-1, A-2, A-4	0	0-2	85-100	75-100	45-85	10-40	15-20	NP-4
		33-80	Clay, silty clay, silty clay loam	CH, CL	A-7	0	0	95-100	85-100	75-95	65-90	40-70	20-45
Espelie-----	11	0-10	Fine sandy loam	ML, SM, SC	A-2, A-4	0	0	95-100	85-100	60-85	30-65	15-25	NP-8
		10-27	Loamy sand, loamy fine sand, fine sand	SP-SM, SM	A-2, A-4	0	0-2	85-100	60-100	30-80	10-40	10-20	NP-4
		27-80	Clay, silty clay, clay loam	CL, CH	A-7	0	0	90-100	85-100	80-100	70-100	40-65	20-40
Grano-----	2	0-11	Loam	CL-ML, SC-SM	A-4, A-6	0	0	95-100	90-97	65-85	45-65	20-35	5-15
		11-41	Silty clay loam, silty clay, clay	CL, CH	A-7	0	0	95-100	90-97	80-95	70-95	40-80	20-50
		41-80	Clay, silty clay, silty clay loam, stratified silt loam to clay	CH, CL	A-7	0	0	95-100	90-100	80-97	75-95	40-80	20-50

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1305: Redby-----	2	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	SW-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
1314: Tacoosh-----	90	0-17	Mucky peat	PT	A-8	0	1-10	---	---	---	---	---	---
		17-33	Mucky peat	PT	A-8	0-5	1-10	---	---	---	---	---	---
		33-80	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	95-100	90-100	70-95	25-40	5-20
Rifle-----	8	0-8	Mucky peat	PT	A-8	0	0-10	---	---	---	---	---	---
		8-80	Mucky peat	PT	A-8	0	0-5	---	---	---	---	---	---
Sax-----	2	0-15	Muck	PT	A-8	0	0	---	---	---	---	---	---
		15-24	Mucky silt loam, silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
		24-39	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
		39-71	Silt loam, silty clay loam, very fine sandy loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	90-100	50-90	16-40	NP-15
		71-80	Silty clay loam, silty clay, clay	CL, CH	A-7	0	0	100	100	90-100	75-95	40-80	15-50
1316: Wheatville-----	85	0-12	Loam	ML, CL, CL-ML	A-4	0	0	100	100	90-100	50-95	15-35	NP-10
		12-35	Loamy very fine sand, silt loam, very fine sandy loam	ML, CL, CL-ML	A-4	0	0	100	100	85-100	80-95	15-35	NP-10
		35-80	Clay, stratified very fine sandy loam to silt loam to silty clay loam to clay	CL, CH	A-7, A-6	0	0	100	100	95-100	90-100	35-80	15-45

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1316: Augsburg-----	13	0-9	Loam	ML, CL, CL-ML	A-4, A-6	0	0	100	100	95-100	50-90	15-40	NP-15
		9-33	Loam, very fine sandy loam, silt loam	ML	A-4	0	0	100	100	95-100	80-90	15-30	NP-10
		33-80	Silty clay, clay, silty clay loam	CH	A-7	0	0	95-100	95-100	95-100	95-100	45-85	25-65
Grano-----	2	0-11	Loam	CL-ML, SC-SM	A-4, A-6	0	0	95-100	90-97	65-85	45-65	20-35	5-15
		11-41	Silty clay loam, silty clay, clay	CL, CH	A-7	0	0	95-100	90-97	80-95	70-95	40-80	20-50
		41-80	Clay, silty clay, silty clay loam, stratified silt loam to clay	CH, CL	A-7	0	0	95-100	90-100	80-97	75-95	40-80	20-50
1326: Augsburg, depressional---	0 to 90	0-9	Mucky very fine sandy loam	OL, CL-ML, CL, ML	A-4, A-6	0	0	100	100	95-100	50-90	15-40	NP-15
		9-16	Loam, very fine sandy loam, silt loam	ML, CL-ML, CL	A-4	0	0	100	100	95-100	80-90	15-35	NP-10
		16-32	Loamy very fine sand, very fine sandy loam, loam	ML, CL, CL-ML	A-4	0	0	100	100	95-100	80-90	15-35	NP-10
		32-80	Silty clay, clay, silty clay loam	CH	A-7	0	0	95-100	95-100	95-100	95-100	50-80	35-55
Wabanica, depressional---	0 to 90	0-8	Mucky silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-90	25-40	5-15
		8-26	Silty clay loam, silt loam	CL, CL-ML	A-4, A-5, A-6, A-7	0	0	100	100	90-100	70-95	25-45	5-20
		26-68	Silt loam, silty clay loam	CL-ML, CL	A-4, A-5, A-6, A-7	0	0	100	100	90-100	70-95	25-45	5-20
		68-80	Clay	CH, CL	A-7	0	0	100	100	90-100	75-95	45-65	20-40

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1326: Sax-----	6	0-15	Muck	PT	A-8	0	0	---	---	---	---	---	---
		15-24	Mucky silt loam, silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
		24-39	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
		39-71	Silt loam, silty clay loam, very fine sandy loam	CL-ML, ML, CL	A-4, A-6	0	0	100	100	90-100	50-90	16-40	NP-15
		71-80	Silty clay loam, silty clay, clay	CL, CH	A-7	0	0	100	100	90-100	75-95	40-80	15-50
Espelie-----	2	0-10	Fine sandy loam	SM, ML, SC	A-2, A-4	0	0	95-100	85-100	60-85	30-65	15-25	NP-8
		10-27	Loamy sand, loamy fine sand, fine sand	SM, SP-SM	A-2, A-4	0	0-2	85-100	60-100	30-80	10-40	10-20	NP-4
		27-80	Clay, silty clay, clay loam	CH, CL	A-7	0	0	90-100	85-100	80-100	70-100	40-65	20-40
Zippel-----	2	0-10	Very fine sandy loam	ML, CL-ML	A-4	0	0	100	95-100	85-100	50-75	15-25	NP-5
		10-16	Very fine sand, very fine sandy loam, loamy very fine sand	CL-ML, ML	A-4	0	0	100	95-100	85-100	50-95	15-25	NP-5
		16-80	Stratified silt loam to very fine sand	CL-ML, ML	A-4	0	0	100	95-100	85-100	50-95	15-25	NP-5
1327B: Karlstad-----	65	0-11	Loamy sand	SM, SP-SM	A-2, A-3	0-5	0-5	95-100	95-100	75-95	5-35	15-25	NP-4
		11-14	Sandy loam	SM, SC, SC-SM	A-2, A-4	0-5	0-5	95-100	95-100	75-95	12-50	15-25	NP-10
		14-16	Gravelly sandy loam	SC, SC-SM, SM, SW-SM	A-1, A-2	0-5	0-25	65-95	50-75	25-50	10-30	15-25	NP-10
		16-80	Stratified very gravelly coarse sand to sand	SP-SM, SP	A-1, A-2	0-5	0-25	60-100	35-100	20-80	0-55	0-20	NP-3

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1327B: Marquette-----	25	0-10	Loamy sand	SP-SM, SC-SM, SM	A-2	0	0-5	90-100	85-100	50-75	10-35	0-20	NP-5
		10-18	Very gravelly sandy loam	GC, SC, GM, SM	A-1, A-2	0	0-15	45-85	20-55	10-45	5-35	0-30	NP-10
		18-80	Stratified very gravelly coarse sand to very gravelly sand	GP-GM, GP, SP, SP-SM	A-1, A-3, A-2	0	0-10	40-90	15-90	0-65	0-30	0-14	NP
Sahkahtay-----	7	0-4	Sandy loam	SM	A-2, A-4	0	0	85-100	80-100	55-85	25-40	15-25	NP-10
		4-8	Sand, loamy sand	SM, SP-SM	A-2	0	0	85-100	80-100	50-85	5-25	0-14	NP
		8-14	gravelly sandy loam, sandy clay loam, loam	CL, SC	A-6	0	0-5	80-100	75-98	50-85	40-60	30-40	10-20
		14-80	Loamy sand, sand, gravelly coarse sand	SW, SM, SW-SM	A-1, A-2-4	0	0-5	55-90	50-85	15-60	2-20	0-14	NP
Redby-----	3	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	SW-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
1328: Northwood, wooded-----	90	0-15	Muck	PT	A-8	0	0-5	---	---	---	---	---	---
		15-21	Fine sandy loam, loamy fine sand, loamy sand	SM, SC-SM	A-2, A-4	0	0-3	95-100	90-100	51-85	15-50	0-35	NP-10
		21-39	Coarse sand, fine sand, loamy fine sand	SP-SM, SM	A-3, A-2	0	0-3	95-100	80-100	70-95	5-35	0-14	NP
		39-80	Loam, clay loam, fine sandy loam	ML, CL-ML, CL	A-4, A-6	0-1	1-5	95-100	90-100	75-100	50-80	20-40	3-20

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1328: Berner, wooded--	5	0-20	Muck	PT	A-8	0	0-5	---	---	---	---	---	---
		20-44	Sand, loamy sand, fine sand	SP, SM, SP-SM	A-2, A-3	0	0-2	90-100	70-100	60-80	0-25	0-20	NP-3
		44-80	Loam, fine sandy loam, silt loam	CL-ML, CL	A-4, A-6	0-1	1-5	95-100	85-100	60-90	50-80	20-40	5-20
Grygla-----	5	0-6	Loamy fine sand	SC-SM, SM	A-2	0	0	100	100	85-95	15-35	15-25	NP-7
		6-26	Sand, fine sand, loamy fine sand	SC-SM, SP-SM, SM	A-2, A-3	0	0-1	95-100	90-100	70-95	5-35	15-20	NP-5
		26-80	Loam, fine sandy loam, silt loam	CL-ML, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20
1333: Dora, wooded----	90	0-8	Muck	PT	A-8	0	0-5	---	---	---	---	---	---
		8-26	Muck	PT	A-8	0	0-5	---	---	---	---	---	---
		26-80	Silty clay loam, silty clay, clay	CH, CL	A-7	0	0	100	100	90-100	90-100	45-80	35-50
Lupton-----	4	0-16	Muck	PT	A-8	0	10-30	---	---	---	---	---	---
		16-80	Muck	PT	A-8	0	10-30	---	---	---	---	---	---
Wildwood-----	4	0-12	Muck	PT	A-8	0	0	---	---	---	---	---	---
		12-33	Clay, silty clay, silty clay loam	CH	A-7	0	0	100	100	95-100	85-98	75-90	50-65
		33-80	Clay, silty clay	CH	A-7	0	0	100	85-100	85-100	60-95	65-90	40-65

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10						
						inches	inches	4	10	40	200		
		In				Pct	Pct					Pct	
1333:	2												
Auganaush-----		0-5	Loam	CL-ML, CL	A-4, A-6	0	0-3	95-100	85-95	85-95	60-90	20-40	5-15
		5-7	Loam, fine sandy loam, silt loam	CL-ML, SM, SC-SM, ML	A-4	0	0-3	95-100	85-95	75-90	40-70	15-30	NP-10
		7-18	Clay, clay loam, silty clay loam	CL, CH	A-7	0	0-3	95-100	85-95	85-95	70-90	45-70	25-45
		18-58	Clay loam, silty clay loam, silty clay	CL, CH	A-6, A-7	0-1	1-5	95-100	85-95	80-95	60-90	35-55	15-30
		58-80	Loam, clay loam, silty clay loam	CL-ML, CL	A-6, A-7	0-1	1-5	90-100	85-95	60-90	55-85	25-45	5-20
1356:													
Water, miscellaneous.													
1399B:													
Two Inlets-----	85	0-2	Loamy sand	SM	A-2	0	0-2	90-100	85-100	50-70	15-30	15-20	NP-5
		2-4	Loamy coarse sand	SM	A-2	0	0-2	90-100	75-100	35-65	5-15	15-20	NP-5
		4-17	Loamy coarse sand	SP-SM, SM	A-1, A-2-4, A-3	0	0-3	90-100	75-95	35-65	5-15	15-25	NP-5
		17-80	Sand, coarse sand	SP, SP-SM	A-1, A-3	0	0-5	85-95	75-95	35-75	2-10	---	NP
Wurtsmith-----	6	0-5	Loamy sand	SM, SP-SM	A-1, A-2	0	0	75-100	75-100	40-75	12-30	0-14	NP
		5-45	Sand, coarse sand	SP, SM, SP-SM	A-1, A-2, A-3	0	0	75-100	75-100	40-75	3-30	0-14	NP
		45-80	Sand, coarse sand	SP-SM, SP, SM	A-1, A-2, A-3	0	0	75-100	75-100	40-70	3-15	0-14	NP
Zimmerman-----	6	0-6	Fine sand	SP-SM, SM	A-2	0	0	100	95-100	95-100	10-20	15-20	NP
		6-80	Fine sand, loamy fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	60-100	5-20	0-20	NP-5
Meehan-----	3	0-8	Loamy sand	SM	A-1, A-2	0	0	90-100	75-100	40-90	15-30	0-14	NP
		8-31	Sand, loamy sand, loamy coarse sand	SP-SM, SP, SM	A-1, A-2, A-3	0	0	90-100	75-100	40-90	3-30	0-14	NP
		31-80	Sand, coarse sand	SP-SM, SP	A-1, A-2, A-3	0	0	90-100	75-100	40-90	0-5	0-14	NP

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1401: Grygla, depressional---	90	0-5	Mucky loamy fine sand	SC-SM, SM	A-2	0	0	100	100	85-95	15-35	0-25	NP-10
		5-36	Sand, fine sand, loamy fine sand	SC-SM, SM, SP-SM	A-2, A-3	0	0-1	95-100	90-100	70-95	5-35	0-20	NP-5
		36-80	Loam, fine sandy loam, silt loam	CL-ML, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20
Northwood, wooded-----	5	0-15	Muck	PT	A-8	0	0-5	---	---	---	---	---	---
		15-21	Fine sandy loam, loamy fine sand, loamy sand	SM, SC-SM	A-2, A-4	0	0-3	95-100	90-100	51-85	15-50	0-35	NP-10
		21-39	Coarse sand, fine sand, loamy fine sand	SM, SP-SM	A-3, A-2	0	0-3	95-100	80-100	70-95	5-35	0-14	NP
		39-80	Loam, clay loam, fine sandy loam	ML, CL, CL-ML	A-4, A-6	0-1	1-5	95-100	90-100	75-100	50-80	20-40	3-20
Chilgren-----	3	0-5	Fine sandy loam	ML, SC-SM, CL-ML, SM	A-2, A-4	0-1	0-3	90-100	85-100	60-85	25-55	15-35	NP-10
		5-9	Loamy sand, loamy fine sand, fine sandy loam	ML, SM, CL- ML, SC-SM	A-2, A-4	0-1	0-3	75-100	70-100	50-85	15-55	15-35	NP-10
		9-16	Clay loam, loam, sandy clay loam	CL, SC, SM, ML	A-4, A-6, A-7	0-1	1-5	75-100	70-100	60-95	35-85	25-50	7-20
		16-80	Loam, sandy loam, fine sandy loam	ML, SC, CL, SM	A-4	0-1	2-5	75-100	70-100	50-90	35-70	20-30	3-10
Grygla-----	2	0-6	Loamy fine sand	SM, SC-SM	A-2	0	0	100	100	85-95	15-35	15-25	NP-7
		6-26	Sand, fine sand, loamy fine sand	SM, SC-SM, SP-SM	A-2, A-3	0	0-1	95-100	90-100	70-95	5-35	15-20	NP-5
		26-80	Loam, fine sandy loam, silt loam	CL-ML, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1402: Leafriver, wooded-----	90	0-10	Muck	PT	A-8	0	0-5	---	---	---	---	---	---
		10-13	Loamy sand, sandy loam, fine sand	SM	A-2-4, A-4	0	0	100	95-100	55-80	15-40	15-20	NP-4
		13-80	Loamy sand, fine sand, sand	SP, SP-SM, SM	A-1-b, A-2, A-2-4, A-3	0	0	95-100	80-100	45-70	3-35	---	NP
Cormant-----	4	0-6	Loamy fine sand	SM, SP-SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
		6-80	Fine sand, sand, loamy fine sand	SP, SP-SM, SM	A-2, A-3	0	0	100	100	75-100	1-20	0-14	NP
Tawas-----	4	0-10	Muck	PT	A-8	0	1-10	---	---	---	---	---	---
		10-27	Muck, mucky peat	PT	A-8	0	0-10	---	---	---	---	---	---
		27-80	Fine sand, sand, loamy sand	SM, SP, SP-SM	A-2-4, A-3	0	0	80-100	60-100	50-75	0-20	0-14	NP
Redby-----	2	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	SM, SW-SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP-SM, SP	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
1404: Berner, wooded--	90	0-20	Muck	PT	A-8	0	0-5	---	---	---	---	---	---
		20-44	Sand, loamy sand, fine sand	SP-SM, SM, SP	A-2, A-3	0	0-2	90-100	70-100	60-80	0-25	0-20	NP-3
		44-80	Loam, fine sandy loam, silt loam	CL-ML, CL	A-4, A-6	0-1	1-5	95-100	85-100	60-90	50-80	20-40	5-20
Lupton-----	4	0-16	Muck	PT	A-8	0	10-30	---	---	---	---	---	---
		16-80	Muck	PT	A-8	0	10-30	---	---	---	---	---	---

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1404: Northwood, wooded-----	4	0-15	Muck	PT	A-8	0	0-5	---	---	---	---	---	---
		15-21	Fine sandy loam, loamy fine sand, loamy sand	SM, SC-SM	A-2, A-4	0	0-3	95-100	90-100	51-85	15-50	0-35	NP-10
		21-39	Coarse sand, fine sand, loamy fine sand	SP-SM, SM	A-3, A-2	0	0-3	95-100	80-100	70-95	5-35	0-14	NP
		39-80	Loam, clay loam, fine sandy loam	CL, CL-ML, ML	A-4, A-6	0-1	1-5	95-100	90-100	75-100	50-80	20-40	3-20
Grygla-----	2	0-6	Loamy fine sand	SM, SC-SM	A-2	0	0	100	100	85-95	15-35	15-25	NP-7
		6-26	Sand, fine sand, loamy fine sand	SP-SM, SM, SC-SM	A-2, A-3	0	0-1	95-100	90-100	70-95	5-35	15-20	NP-5
		26-80	Loam, fine sandy loam, silt loam	CL-ML, CL	A-4, A-6	0-1	0-5	95-100	80-100	70-85	50-70	20-40	5-20
1405: Lallie-----	90	0-8	Mucky silt loam	CL	A-6	0	0	100	100	95-100	70-95	30-40	10-20
		8-80	Silty clay loam, silty clay	CH, CL	A-6, A-7	0	0	100	95-100	90-100	85-100	35-95	15-60
Sax-----	7	0-15	Muck	PT	A-8	0	0	---	---	---	---	---	---
		15-24	Mucky silt loam, silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
		24-39	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	60-85	20-40	5-15
		39-71	Silt loam, silty clay loam, very fine sandy loam	ML, CL, CL-ML	A-4, A-6	0	0	100	100	90-100	50-90	16-40	NP-15
		71-80	Silty clay loam, silty clay, clay	CL, CH	A-7	0	0	100	100	90-100	75-95	40-80	15-50

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10						
						inches	inches	4	10	40	200		
		In				Pct	Pct					Pct	
1405: Wabanica-----	3	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	60-90	25-35	5-15
		8-19	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	95-100	85-100	60-95	25-40	5-15
		19-80	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	95-100	85-100	60-95	25-40	5-15
1414: Nereson, very cobbly-----	85	0-7	Fine sandy loam	SM	A-4	0-2	1-5	90-100	80-98	50-70	35-50	15-20	NP-4
		7-11	Loam, fine sandy loam, sandy loam	CL-ML, CL, SC, SC-SM	A-4	0-1	0-5	90-100	80-98	55-90	40-60	20-28	5-10
		11-29	Sandy loam, loam, gravelly loam	CL, CL-ML, ML, SC-SM, SM	A-4	0-1	1-5	85-95	75-95	45-85	10-55	15-30	NP-10
		29-80	Sandy loam, loam, gravelly loam	SM, SC-SM, ML, CL-ML, CL	A-4	0-1	1-5	85-95	75-95	45-85	10-55	15-30	NP-10
Percy, very cobbly-----	10	0-8	Loam	SC-SM, SC, CL-ML, CL	A-4, A-6	0-2	1-5	90-100	85-100	70-95	35-70	20-40	5-15
		8-23	Loam, fine sandy loam, sandy loam	CL-ML, CL	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		23-80	Loam, fine sandy loam, sandy loam	SC-SM, CL-ML, SC, CL	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10
Pelan-----	3	0-6	Sandy loam	SC-SM, SM	A-2, A-4	0	0-3	95-100	75-100	55-90	30-50	0-20	NP-5
		6-12	Very gravelly sandy loam, very gravelly sandy clay loam	GC, SC, SM, GM	A-1, A-2	0	2-5	45-85	25-50	10-45	5-35	20-30	NP-10
		12-24	Very gravelly coarse sand, very gravelly fine sandy loam	GP-GM, SP-SM, GP, SP	A-1, A-2	0	2-5	40-85	25-50	5-50	1-10	0-14	NP
		24-60	Fine sandy loam, sandy loam, loam	SC, SM, CL, ML	A-4, A-6	0-1	1-5	90-100	85-95	60-90	40-65	10-30	1-15

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1414: Foxhome-----	2	0-10	Sandy loam	SM	A-4	0	0-2	95-100	90-100	75-90	35-50	15-30	NP-5
		10-15	Fine sand, loamy fine sand, sand	SW-SM, SM	A-2, A-3	0-1	0-3	95-100	90-100	70-85	5-35	0-25	NP-5
		15-23	gravelly sand, very gravelly coarse sand, very gravelly loamy sand	SP-SM, GP, GP-GM, SP	A-1	0	2-5	30-65	15-45	5-40	0-10	0-20	NP-1
		23-80	Loam, clay loam, silt loam	CL, CL-ML, ML	A-4, A-6	0-1	1-5	90-100	85-100	75-90	50-80	20-40	1-15
1428: Karlsruhe-----	85	0-8	Sandy loam	SC, SC-SM, SM	A-4, A-2	0	0	95-100	85-100	60-90	30-65	0-35	NP-15
		8-16	Sandy loam, loamy sand	SC, SC-SM, SM	A-2, A-4, A-1	0	0	95-100	85-100	45-75	10-40	0-35	NP-15
		16-80	Coarse sand, gravelly coarse sand, gravelly sand	SM, SP, SP- SM, GP, GP- GM	A-1, A-2, A-3	0	0-5	45-90	30-80	20-70	0-15	0-20	NP
Syrene-----	10	0-11	Sandy loam	SC, SC-SM, SM	A-4	0	0-3	95-100	85-100	55-70	35-50	15-35	NP-10
		11-19	Loam, sandy loam, sandy clay loam	SM, ML	A-4	0	0-3	95-100	85-100	55-75	35-65	20-40	1-10
		19-80	Stratified gravelly coarse sand to loamy fine sand	SP, SP-SM	A-1, A-2, A-3	0	2-5	75-95	55-80	30-60	0-10	5-20	NP-5
Ulen-----	5	0-10	Fine sandy loam	SM, SC, SC-SM	A-4	0	0	100	100	80-100	35-50	0-25	NP-8
		10-16	Loamy fine sand, fine sand	SM	A-2	0	0	95-100	95-100	70-95	12-35	0-14	NP
		16-67	Fine sand	SM, SP-SM	A-2, A-3	0	0	100	95-100	80-100	5-35	0-14	NP
		67-80	Very fine sandy loam, fine sandy loam	SM, ML, SC- SM, CL-ML	A-4	0	0	100	95-100	70-95	35-60	20-30	NP-10

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10						
						inches	inches	4	10	40	200		
		In				Pct	Pct					Pct	
1444: Wurtsmith-----	85	0-5	Loamy sand	SM, SP-SM	A-1, A-2	0	0	75-100	75-100	40-75	12-30	0-14	NP
		5-45	Coarse sand, sand	SM, SP-SM, SP	A-1, A-2, A-3	0	0	75-100	75-100	40-75	3-30	0-14	NP
		45-80	Coarse sand, sand	SP-SM, SM, SP	A-1, A-2, A-3	0	0	75-100	75-100	40-70	3-15	0-14	NP
Meehan-----	10	0-8	Loamy sand	SM	A-1, A-2	0	0	90-100	75-100	40-90	15-30	0-14	NP
		8-31	Sand, loamy sand, loamy coarse sand	SP, SP-SM, SM	A-1, A-2, A-3	0	0	90-100	75-100	40-90	3-30	0-14	NP
		31-80	Sand, coarse sand	SP-SM, SP	A-1, A-2, A-3	0	0	90-100	75-100	40-90	0-5	0-14	NP
Clearriver-----	2	0-2	Loamy fine sand	SP-SM, SM	A-2	0	0	95-100	85-100	40-90	10-35	15-25	NP-10
		2-21	Sand, loamy sand	SM, SP-SM	A-2, A-3	0	0	95-100	85-100	55-90	5-35	---	NP
		21-80	Stratified fine sand to gravelly coarse sand	SP, SP-SM	A-1, A-2, A-3	0	0-2	75-100	65-85	40-65	0-10	---	NP
Two Inlets-----	2	0-2	Loamy sand	SM	A-2	0	0-2	90-100	85-100	50-70	15-30	15-20	NP-5
		2-4	Loamy coarse sand	SM	A-2	0	0-2	90-100	75-100	35-65	5-15	15-20	NP-5
		4-17	Loamy coarse sand	SM, SP-SM	A-2-4, A-3, A-1	0	0-3	90-100	75-95	35-65	5-15	15-25	NP-5
		17-80	Sand, coarse sand	SP-SM, SP	A-1, A-3	0	0-5	85-95	75-95	35-75	2-10	---	NP
Cormant-----	1	0-6	Loamy fine sand	SP-SM, SM	A-4, A-2, A-3	0	0	100	100	80-100	5-40	0-14	NP
		6-80	Fine sand, sand, loamy fine sand	SM, SP-SM, SP	A-2, A-3	0	0	100	100	75-100	1-20	0-14	NP
1448: Grano-----	90	0-13	Clay	CH, CL	A-7	0	0	95-100	90-97	80-95	70-95	45-80	20-50
		13-54	Silty clay loam, silty clay, clay	CH, CL	A-7	0	0	95-100	90-97	80-95	70-95	40-80	20-50
		54-80	Silty clay, clay, stratified silt loam to clay, silty clay loam	CH, CL	A-7	0	0	95-100	90-100	80-97	75-95	40-80	20-50

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1448: Percy-----	5	0-10	Loam	SC, CL-ML, CL, SC-SM	A-4, A-6	0-1	0-3	90-100	85-100	70-95	35-70	20-40	5-15
		10-25	Loam, fine sandy loam, sandy loam	CL, CL-ML	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		25-80	Loam, fine sandy loam, sandy loam	SC, CL, SC- SM, CL-ML	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10
Augsburg-----	3	0-9	Loam	ML, CL-ML, CL	A-4, A-6	0	0	100	100	95-100	50-90	15-40	NP-15
		9-33	Loam, very fine sandy loam, silt loam	ML	A-4	0	0	100	100	95-100	80-90	15-30	NP-10
		33-80	Silty clay, clay, silty clay loam	CH	A-7	0	0	95-100	95-100	95-100	95-100	45-85	25-65
Woodslake-----	2	0-8	Clay	MH, CH	A-7	0	0	100	98-100	90-100	85-98	50-65	20-35
		8-15	Clay	CH	A-7	0	0	95-100	95-100	90-100	85-100	60-85	35-50
		15-36	Clay	CH	A-7	0	0	95-100	95-100	90-100	85-100	60-85	35-50
		36-80	Clay, silt loam, silty clay loam	CH, CL	A-6, A-7	0	0	100	100	90-100	70-95	40-65	20-40
1449: Grano-----	90	0-11	Loam	SC-SM, CL-ML	A-4, A-6	0	0	95-100	90-97	65-85	45-65	20-35	5-15
		11-41	Silty clay loam, silty clay, clay	CL, CH	A-7	0	0	95-100	90-97	80-95	70-95	40-80	20-50
		41-80	Clay, silty clay, silty clay loam, stratified silt loam to clay	CH, CL	A-7	0	0	95-100	90-100	80-97	75-95	40-80	20-50
Percy-----	5	0-10	Loam	SC-SM, CL, SC, CL-ML	A-4, A-6	0-1	0-3	90-100	85-100	70-95	35-70	20-40	5-15
		10-25	Loam, fine sandy loam, sandy loam	CL, CL-ML	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		25-80	Loam, fine sandy loam, sandy loam	SC-SM, CL-ML, CL, SC	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10	4	10	40	200		
						inches	inches						
		In				Pct	Pct					Pct	
1449:													
Augsburg-----	3	0-9	Loam	ML, CL-ML, CL	A-4, A-6	0	0	100	100	95-100	50-90	15-40	NP-15
		9-33	Loam, very fine sandy loam, silt loam	ML	A-4	0	0	100	100	95-100	80-90	15-30	NP-10
		33-80	Silty clay, clay, silty clay loam	CH	A-7	0	0	95-100	95-100	95-100	95-100	45-85	25-65
Woodslake-----	2	0-8	Clay	CH, MH	A-7	0	0	100	98-100	90-100	85-98	50-65	20-35
		8-15	Clay	CH	A-7	0	0	95-100	95-100	90-100	85-100	60-85	35-50
		15-36	Clay	CH	A-7	0	0	95-100	95-100	90-100	85-100	60-85	35-50
		36-80	Clay, silt loam, silty clay loam	CL, CH	A-6, A-7	0	0	100	100	90-100	70-95	40-65	20-40
1807:													
Cathro, ponded--	90	0-19	Muck	PT	A-8	0	0	---	---	---	---	---	---
		19-80	Sandy loam, silt loam, clay loam	SC, CL, SC- SM, CL-ML	A-4, A-6	0-1	0-5	80-100	65-100	60-100	35-90	20-40	4-20
Haug-----	4	0-10	Muck	PT	A-8	0	0	---	---	---	---	---	---
		10-16	Mucky sandy loam, fine sandy loam, loam	SM, ML, OL, CL	A-4, A-6	0-1	0-3	95-100	90-100	70-85	35-65	15-40	1-15
		16-80	Loam, sandy loam, fine sandy loam	SC, ML, CL, SM	A-4, A-6	0-1	1-5	95-100	70-100	60-95	35-65	15-40	1-15
Seelyeville, ponded-----	4	0-18	Muck	PT	A-8	0	0	---	---	---	---	---	---
		18-80	Mucky peat, muck	PT	A-8	0	0	---	---	---	---	---	---
Percy-----	2	0-8	Loam	SC, CL-ML, CL, SC-SM	A-4, A-6	0-2	1-5	90-100	85-100	70-95	35-70	20-40	5-15
		8-23	Loam, fine sandy loam, sandy loam	CL, CL-ML	A-4	0-1	1-5	85-100	85-98	55-90	35-70	20-30	5-10
		23-80	Loam, fine sandy loam, sandy loam	SC, CL, CL- ML, SC-SM	A-4	0-1	1-5	85-100	85-98	55-90	35-70	15-30	5-10

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
		In				Pct	Pct					Pct	
1808: Markey, ponded--	90	0-17	Muck	PT	A-8	0	0	---	---	---	---	---	---
		17-80	Fine sand, loamy sand, coarse sand	SP, SM, SP-SM	A-2, A-3	0	0	100	75-100	60-75	0-20	---	NP
Leafriver-----	4	0-13	Muck	PT	A-8	0	0	---	---	---	---	---	---
		13-80	Loamy sand, fine sand, sand	SP, SP-SM, SM	A-2-4, A-3, A-1-b, A-2	0	0	95-100	80-100	45-70	3-35	---	NP
Seelyeville, ponded-----	4	0-18	Muck	PT	A-8	0	0	---	---	---	---	---	---
		18-80	Mucky peat, muck	PT	A-8	0	0	---	---	---	---	---	---
Cormant-----	2	0-6	Loamy fine sand	SP-SM, SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
		6-80	Fine sand, sand, loamy fine sand	SM, SP-SM, SP	A-2, A-3	0	0	100	100	75-100	1-20	0-14	NP
1918: Croke-----	85	0-12	Very fine sandy loam	ML, CL, CL-ML	A-4	0	0	100	100	85-100	50-95	15-35	NP-10
		12-21	Very fine sandy loam, silt loam, loamy very fine sand	ML, CL, CL-ML	A-4	0	0	100	100	85-100	80-95	15-35	NP-10
		21-80	Clay, silty clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	90-100	40-75	20-45
Augsburg-----	13	0-9	Loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	50-90	15-40	NP-15
		9-33	Loam, very fine sandy loam, silt loam	ML	A-4	0	0	100	100	95-100	80-90	15-30	NP-10
		33-80	Silty clay, clay, silty clay loam	CH	A-7	0	0	95-100	95-100	95-100	95-100	45-85	25-65

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10						
						inches	inches	4	10	40	200		
		In				Pct	Pct					Pct	
1918: Grano-----	2	0-11	Loam	CL-ML, SC-SM	A-4, A-6	0	0	95-100	90-97	65-85	45-65	20-35	5-15
		11-41	Silty clay loam, silty clay, clay	CL, CH	A-7	0	0	95-100	90-97	80-95	70-95	40-80	20-50
		41-80	Clay, silty clay, silty clay loam, stratified silt loam to clay	CL, CH	A-7	0	0	95-100	90-100	80-97	75-95	40-80	20-50
1923B: Garnes, very stony-----	85	0-6	Loam	ML, CL-ML	A-4	1-3	1-10	95-100	85-100	60-90	50-65	20-35	1-10
		6-13	Clay loam, sandy clay loam	CL, SC	A-4, A-6	0-1	0-3	95-100	80-100	70-100	45-80	20-40	7-20
		13-80	Loam, fine sandy loam, sandy loam	ML, CL, SC, SM	A-4, A-6	0-1	1-5	95-100	75-95	60-90	35-65	15-40	1-15
Chilgren-----	10	0-5	Fine sandy loam	SC-SM, ML, SM, CL-ML	A-2, A-4	0-1	0-3	90-100	85-100	60-85	25-55	15-35	NP-10
		5-9	Loamy sand, loamy fine sand, fine sandy loam	SM, ML, CL- ML, SC-SM	A-2, A-4	0-1	0-3	75-100	70-100	50-85	15-55	15-35	NP-10
		9-16	Clay loam, loam, sandy clay loam	CL, SM, ML, SC	A-4, A-6, A-7	0-1	1-5	75-100	70-100	60-95	35-85	25-50	7-20
		16-80	Loam, sandy loam, fine sandy loam	ML, SM, CL, SC	A-4	0-1	2-5	75-100	70-100	50-90	35-70	20-30	3-10
Eckvoll-----	3	0-6	Loamy fine sand	SC-SM, SM	A-4, A-2	0	0-2	90-100	85-100	45-80	25-40	15-20	NP-7
		6-21	Fine sand, sand, loamy fine sand	SM, SP-SM	A-1, A-2, A-3	0	0-2	90-100	85-100	45-75	5-30	15-20	NP-4
		21-26	Clay loam, sandy clay loam, loam	SC, CL	A-4, A-6, A-7	0	0-5	90-100	85-98	65-95	45-75	25-50	7-25
		26-80	Loam, clay loam, fine sandy loam	CL-ML, CL	A-4, A-6, A-7	0-1	1-5	90-100	85-98	70-95	50-80	25-45	5-20

Table 23.--Engineering Index Properties--Continued

Map symbol and component name	Percent of map unit	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
				Unified	AASHTO	>10	3-10	4	10	40	200		
						inches	inches						
		In				Pct	Pct					Pct	
1923B:													
Pelan-----	2	0-6	Sandy loam	SC-SM, SM	A-2, A-4	0	0-3	95-100	75-100	55-90	30-50	0-20	NP-5
		6-12	Very gravelly sandy loam, very gravelly sandy clay loam	GM, SM, GC, SC	A-1, A-2	0	2-5	45-85	25-50	10-45	5-35	20-30	NP-10
		12-24	Very gravelly coarse sand, very gravelly fine sandy loam	GP, SP-SM, GP-GM, SP	A-1, A-2	0	2-5	40-85	25-50	5-50	1-10	0-14	NP
		24-60	Fine sandy loam, sandy loam, loam	CL, ML, SC, SM	A-4, A-6	0-1	1-5	90-100	85-95	60-90	40-65	10-30	1-15
1984:													
Leafriver-----	90	0-13	Muck	PT	A-8	0	0	---	---	---	---	---	---
		13-80	Loamy sand, fine sand, sand	SP, SM, SP-SM	A-1-b, A-2, A-2-4, A-3	0	0	95-100	80-100	45-70	3-35	---	NP
Cormant-----	5	0-6	Loamy fine sand	SM, SP-SM	A-2, A-3, A-4	0	0	100	100	80-100	5-40	0-14	NP
		6-80	Fine sand, sand, loamy fine sand	SM, SP-SM, SP	A-2, A-3	0	0	100	100	75-100	1-20	0-14	NP
Markey-----	3	0-42	Muck	PT	A-8	0	0	---	---	---	---	---	---
		42-80	Fine sand, loamy sand, coarse sand	SM, SP, SP-SM	A-2, A-3	0	0	100	75-100	60-75	0-20	---	NP
Redby-----	2	0-3	Loamy fine sand	SM	A-2, A-3	0	0	100	95-100	85-95	5-25	0-20	NP-3
		3-28	Fine sand, sand	SW-SM, SM	A-2, A-3	0	0	100	95-100	80-95	5-35	0-20	NP-3
		28-80	Fine sand, sand	SP, SP-SM	A-2, A-3	0	0	100	95-100	80-95	2-12	0-14	NP
W:													
Water.													

Table 24.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
47:													
Colvin-----	85	0-11	27-34	1.20-1.50	0.20-0.60	0.20-0.22	3.0-5.9	4.0-7.0	.32	.32	5	4L	86
		11-41	18-34	1.20-1.50	0.20-0.60	0.16-0.20	3.0-5.9	0.0-5.0	.32	.32			
		41-80	18-34	1.30-1.50	0.20-2.00	0.15-0.20	3.0-5.9	0.0-1.0	.32	.32			
Bearden-----	5	0-7	10-26	1.20-1.40	0.60-2.00	0.20-0.24	3.0-5.9	3.0-7.0	.32	.32	5	4L	86
		7-32	18-34	1.30-1.50	0.20-0.60	0.16-0.22	3.0-5.9	1.0-4.0	.37	.37			
		32-80	18-34	1.30-1.80	0.06-0.20	0.16-0.22	3.0-5.9	0.0-0.5	.43	.43			
Grano-----	5	0-13	40-60	1.20-1.50	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.28	.28	5	4	86
		13-54	35-60	1.20-1.50	0.06-0.20	0.15-0.18	6.0-8.9	1.0-3.0	.32	.32			
		54-80	22-60	1.20-1.60	0.06-0.20	0.15-0.18	6.0-8.9	0.0-0.5	.32	.32			
Sax-----	5	0-15	0-1	0.15-0.25	0.20-6.00	0.35-0.45	---	25-70	---	---	5	2	134
		15-24	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	1.0-15	.28	.28			
		24-39	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	0.5-1.0	.43	.43			
		39-71	10-35	1.30-1.55	0.60-2.00	0.14-0.22	0.0-2.9	0.0-0.5	.43	.43			
		71-80	27-60	1.30-1.60	0.06-0.60	0.09-0.19	6.0-8.9	0.0-0.5	.43	.43			
48B:													
Hiwood-----	85	0-3	1-5	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.15	.15	5	1	250
		3-22	1-10	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.15	.15			
		22-80	1-10	1.55-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
Redby-----	7	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17			
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			
Clearriver-----	3	0-2	5-15	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-2.0	.17	.17	5	2	134
		2-21	3-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		21-80	1-5	1.55-1.70	6.00-20	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15			
Cormant-----	3	0-6	3-10	1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
Zimmerman-----	2	0-6	2-5	1.45-1.65	6.00-20	0.07-0.09	0.0-2.9	0.5-1.0	.17	.17	5	1	220
		6-80	2-10	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.17	.17			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
52:													
Augsburg-----	85	0-9	10-27	1.20-1.40	0.60-2.00	0.20-0.23	0.0-2.9	4.0-6.0	.28	.28	5	4L	86
		9-33	5-18	1.30-1.50	2.00-6.00	0.20-0.23	0.0-2.9	1.0-3.0	.28	.28			
		33-80	35-85	1.10-1.40	0.0000-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28			
Croke-----	5	0-12	10-18	1.25-1.40	2.00-6.00	0.20-0.24	0.0-2.9	3.0-7.0	.28	.28	5	3	86
		12-21	10-18	1.35-1.55	2.00-6.00	0.17-0.22	0.0-2.9	0.0-0.5	.28	.28			
		21-80	35-60	1.15-1.50	0.06-0.20	0.10-0.15	6.0-8.9	0.0-0.5	.28	.28			
Grano-----	5	0-11	10-27	1.30-1.60	0.60-6.00	0.10-0.16	0.0-2.9	2.0-5.0	.24	.24	5	5	56
		11-41	35-60	1.20-1.50	0.06-0.20	0.15-0.18	6.0-8.9	1.0-3.0	.32	.32			
		41-80	22-60	1.20-1.60	0.06-0.20	0.15-0.18	6.0-8.9	0.0-0.5	.32	.32			
Sago-----	5	0-14	---	0.15-0.25	0.60-6.00	0.35-0.45	0.0-2.9	50-95	---	---	5	2	134
		14-80	6-18	1.50-1.70	0.60-2.00	0.14-0.20	0.0-2.9	0.0-2.0	.28	.28			
59:													
Grimstad-----	85	0-10	10-18	1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	5	3	86
		10-30	2-15	1.45-1.60	6.00-20	0.08-0.14	0.0-2.9	1.0-2.0	.20	.20			
		30-80	10-30	1.50-1.65	0.60-2.00	0.11-0.19	0.0-2.9	0.0-0.5	.37	.37			
Strathcona-----	12	0-10	5-18	1.25-1.45	2.00-6.00	0.14-0.17	0.0-2.9	3.0-6.0	.20	.20	3	3	86
		10-17	10-18	1.30-1.50	2.00-6.00	0.14-0.16	0.0-2.9	0.5-1.0	.24	.24			
		17-28	2-8	1.35-1.60	6.00-20	0.05-0.09	0.0-2.9	0.0-0.5	.10	.10			
		28-80	15-30	1.40-1.60	0.20-2.00	0.14-0.18	3.0-5.9	0.0-0.5	.32	.32			
Foxhome-----	3	0-10	10-20	1.35-1.50	2.00-6.00	0.13-0.18	0.0-2.9	3.0-7.0	.20	.20	3	3	86
		10-15	2-10	1.45-1.60	6.00-20	0.07-0.12	0.0-2.9	0.5-1.0	.20	.20			
		15-23	1-5	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-1.0	.05	.15			
		23-80	12-35	1.40-1.70	0.60-2.00	0.15-0.22	0.0-2.9	0.0-0.5	.32	.37			
64:													
Ulen-----	85	0-10	8-20	1.30-1.50	2.00-6.00	0.13-0.18	0.0-2.9	2.0-5.0	.20	.20	3	3	86
		10-16	5-12	1.45-1.65	6.00-20	0.06-0.10	0.0-2.9	0.0-1.0	.17	.17			
		16-67	1-7	1.50-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.15	.15			
		67-80	10-18	1.20-1.50	0.60-2.00	0.15-0.19	0.0-2.9	0.0-0.5	.32	.32			
Rosewood-----	10	0-11	8-18	1.20-1.40	2.00-6.00	0.13-0.18	0.0-2.9	4.0-7.0	.24	.24	3	3	86
		11-19	6-18	1.20-1.40	2.00-6.00	0.11-0.15	0.0-2.9	1.0-3.0	.24	.24			
		19-65	1-6	1.45-1.65	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
		65-80	1-6	1.40-1.65	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
Redby-----	3	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17			
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									Kw	Kf	T		
64:		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
Rushlake-----	2	0-8	3-10	1.50-1.70	6.00-20	0.10-0.12	0.0-2.9	0.5-4.0	.17	.17	5	2	134
		8-80	1-10	1.50-1.70	6.00-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.10			
65:													
Foxhome-----	85	0-10	10-20	1.35-1.50	2.00-6.00	0.13-0.18	0.0-2.9	3.0-7.0	.20	.20	3	3	86
		10-15	2-10	1.45-1.60	6.00-20	0.07-0.12	0.0-2.9	0.5-1.0	.20	.20			
		15-23	1-5	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-1.0	.05	.15			
		23-80	12-35	1.40-1.70	0.60-2.00	0.15-0.22	0.0-2.9	0.0-0.5	.32	.37			
Strandquist-----	12	0-8	10-25	1.20-1.70	0.60-2.00	0.14-0.18	3.0-5.9	2.0-6.0	.28	.32	3	4L	86
		8-35	1-8	1.50-1.70	6.00-20	0.03-0.05	0.0-2.9	1.0-3.0	.10	.15			
		35-80	15-30	1.30-1.65	0.60-2.00	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37			
Skagen-----	3	0-9	10-18	1.25-1.40	0.60-2.00	0.16-0.18	0.0-2.9	4.0-9.0	.20	.24	5	4L	86
		9-19	10-18	1.30-1.50	0.60-6.00	0.11-0.18	0.0-2.9	0.5-2.0	.24	.28			
		19-80	10-18	1.30-1.50	0.60-6.00	0.11-0.18	0.0-2.9	0.0-0.5	.24	.28			
67:													
Bearden-----	85	0-7	10-26	1.20-1.40	0.60-2.00	0.20-0.24	3.0-5.9	3.0-7.0	.32	.32	5	4L	86
		7-32	18-34	1.30-1.50	0.20-0.60	0.16-0.22	3.0-5.9	1.0-4.0	.37	.37			
		32-80	18-34	1.30-1.80	0.06-0.20	0.16-0.22	3.0-5.9	0.0-0.5	.43	.43			
Colvin-----	15	0-11	27-34	1.20-1.50	0.20-0.60	0.20-0.22	3.0-5.9	4.0-7.0	.32	.32	5	4L	86
		11-41	18-34	1.20-1.50	0.20-0.60	0.16-0.20	3.0-5.9	0.0-5.0	.32	.32			
		41-80	18-34	1.30-1.50	0.20-2.00	0.15-0.20	3.0-5.9	0.0-1.0	.32	.32			
77:													
Garnes-----	85	0-9	5-20	1.40-1.60	2.00-6.00	0.14-0.18	0.0-2.9	0.5-2.0	.32	.32	5	3	86
		9-14	18-30	1.50-1.65	0.60-2.00	0.17-0.20	3.0-5.9	0.5-1.0	.32	.32			
		14-80	10-27	1.60-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.32	.32			
Chilgren-----	10	0-5	5-18	1.30-1.60	2.00-6.00	0.16-0.18	0.0-2.9	1.0-3.0	.28	.28	5	3	86
		5-9	2-18	1.40-1.60	0.60-2.00	0.13-0.22	0.0-2.9	0.5-1.0	.28	.28			
		9-16	18-35	1.30-1.70	0.60-2.00	0.18-0.22	3.0-5.9	0.0-0.5	.28	.28			
		16-80	10-27	1.30-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.28	.28			
Eckvoll-----	3	0-6	5-15	1.30-1.70	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		6-21	2-10	1.30-1.70	6.00-20	0.06-0.08	0.0-2.9	0.5-1.0	.15	.15			
		21-26	18-35	1.40-1.70	0.20-2.00	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
		26-80	16-32	1.30-1.70	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
Pelan-----	2	0-6	5-20	1.35-1.55	2.00-6.00	0.10-0.13	0.0-2.9	0.5-3.0	.24	.24	5	3	86
		6-12	15-25	1.50-1.65	6.00-20	0.05-0.11	0.0-2.9	0.5-1.0	.20	.24			
		12-24	1-8	1.55-1.70	6.00-20	0.02-0.09	0.0-2.9	0.0-0.5	.20	.20			
		24-60	8-18	1.40-1.75	0.60-2.00	0.14-0.18	0.0-2.9	0.0-0.5	.28	.28			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
111:													
Hangaard-----	90	0-12	8-18	1.25-1.45	2.00-6.00	0.10-0.14	0.0-2.9	3.0-8.0	.20	.20	5	3	86
		12-80	2-10	1.50-1.70	6.00-40	0.02-0.04	0.0-2.9	0.0-0.5	.10	.15			
Deerwood-----	5	0-14	0-0	0.10-0.30	0.60-6.00	0.35-0.45	---	50-90	---	---	5	2	134
		14-16	2-18	1.20-1.70	2.00-20	0.09-0.17	0.0-2.9	4.0-10	.17	.17			
		16-80	0-10	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-2.0	.17	.17			
Rushlake-----	3	0-8	3-10	1.50-1.70	6.00-20	0.10-0.12	0.0-2.9	0.5-4.0	.17	.17	5	2	134
		8-80	1-10	1.50-1.70	6.00-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.10			
Rosewood-----	2	0-11	8-18	1.20-1.40	2.00-6.00	0.13-0.18	0.0-2.9	4.0-7.0	.24	.24	3	3	86
		11-19	6-18	1.20-1.40	2.00-6.00	0.11-0.15	0.0-2.9	1.0-3.0	.24	.24			
		19-65	1-6	1.45-1.65	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
		65-80	1-6	1.40-1.65	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
116:													
Redby-----	85	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17			
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			
Cormant-----	8	0-6	3-10	1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
Hiwood-----	6	0-3	1-5	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.15	.15	5	1	250
		3-22	1-10	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.15	.15			
		22-80	1-10	1.55-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
Leafriver-----	1	0-13	---	0.10-0.25	0.60-6.00	0.35-0.50	---	50-90	---	---	5	2	134
		13-80	0-10	1.50-1.65	6.00-20	0.03-0.08	0.0-2.9	0.5-5.0	.17	.17			
117:													
Cormant-----	85	0-6	3-10	1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
Leafriver-----	7	0-13	---	0.10-0.25	0.60-6.00	0.35-0.50	---	50-90	---	---	5	2	134
		13-80	0-10	1.50-1.65	6.00-20	0.03-0.08	0.0-2.9	0.5-5.0	.17	.17			
Epoufette-----	3	0-10	2-10	1.35-1.50	6.00-20	0.06-0.11	0.0-2.9	2.0-6.0	.17	.17	5	2	134
		10-20	8-18	1.40-1.60	2.00-6.00	0.08-0.14	0.0-2.9	0.0-0.5	.15	.17			
		20-60	0-8	1.40-1.65	6.00-40	0.01-0.03	0.0-2.9	0.0-0.5	.10	.15			
Redby-----	3	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17			
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									Kw	Kf	T		
117: Grygla, depressional--	2	In 0-5 5-36 36-80	Pct 2-15 1-10 8-27	g/cc 1.40-1.60 1.50-1.70 1.30-1.75	In/hr 6.00-20 6.00-20 0.20-2.00	In/in 0.10-0.15 0.06-0.11 0.17-0.19	Pct 0.0-2.9 0.0-2.9 3.0-5.9	Pct 1.0-10 0.0-1.0 0.0-0.5	.15 .15 .37	.15 .15 .37	5	2	134
133: Dalbo-----	85	0-15 15-23 23-80	20-27 35-60 35-60	1.25-1.45 1.25-1.45 1.30-1.60	0.60-2.00 0.06-0.60 0.20-2.00	0.22-0.24 0.10-0.18 0.10-0.18	0.0-2.9 6.0-8.9 3.0-5.9	2.0-4.0 0.5-2.0 0.0-0.5	.37 .32 .32	.37 .32 .32	5	6	48
Mustinka-----	10	0-9 9-35 35-62 62-80	28-40 35-60 18-35 18-35	1.10-1.30 1.20-1.40 1.20-1.40 1.40-1.60	0.20-0.60 0.06-0.20 0.20-0.60 0.20-0.60	0.17-0.24 0.13-0.19 0.14-0.19 0.14-0.19	3.0-5.9 6.0-8.9 3.0-5.9 3.0-5.9	5.0-10 1.0-3.0 0.5-1.0 0.0-0.5	.28 .37 .37 .37	.28 .37 .37 .37	5	7	38
Moranville-----	5	0-8 8-24 24-42 42-80	2-10 2-5 27-35 15-35	1.45-1.60 1.45-1.60 1.15-1.30 1.15-1.30	6.00-20 6.00-20 0.20-0.60 0.20-2.00	0.08-0.11 0.05-0.11 0.14-0.20 0.13-0.20	0.0-2.9 0.0-2.9 3.0-5.9 3.0-5.9	0.5-2.0 0.0-0.5 0.0-0.5 0.0-0.5	.17 .15 .43 .43	.17 .15 .43 .43	5	2	134
145: Enstrom-----	85	0-6 6-29 29-80	4-15 1-12 10-35	1.30-1.50 1.40-1.65 1.50-1.65	6.00-20 6.00-20 0.20-2.00	0.10-0.12 0.06-0.08 0.17-0.20	0.0-2.9 0.0-2.9 3.0-5.9	0.5-4.0 0.0-0.5 0.0-0.5	.17 .15 .37	.17 .15 .37	5	2	134
Grygla-----	10	0-6 6-26 26-80	2-15 1-10 8-27	1.40-1.60 1.50-1.70 1.30-1.75	6.00-20 6.00-20 0.20-2.00	0.13-0.15 0.06-0.11 0.17-0.19	0.0-2.9 0.0-2.9 3.0-5.9	1.0-4.0 0.5-1.0 0.0-0.5	.15 .15 .37	.15 .15 .37	5	2	134
Redby-----	4	0-3 3-28 28-80	2-10 1-8 0-6	1.40-1.60 1.55-1.70 1.55-1.70	6.00-20 6.00-20 6.00-20	0.08-0.12 0.07-0.10 0.06-0.08	0.0-2.9 0.0-2.9 0.0-2.9	0.5-2.0 0.0-0.5 0.0-0.5	.17 .17 .17	.17 .17 .17	5	2	134
Pelan-----	1	0-6 6-12 12-24 24-60	5-20 15-25 1-8 8-18	1.35-1.55 1.50-1.65 1.55-1.70 1.40-1.75	2.00-6.00 6.00-20 6.00-20 0.60-2.00	0.10-0.13 0.05-0.11 0.02-0.09 0.14-0.18	0.0-2.9 0.0-2.9 0.0-2.9 0.0-2.9	0.5-3.0 0.5-1.0 0.0-0.5 0.0-0.5	.24 .20 .20 .28	.24 .24 .20 .28	5	3	86
147: Spooner-----	85	0-6 6-15 15-22 22-60	5-18 3-18 18-35 5-32	1.30-1.45 1.35-1.55 1.30-1.50 1.40-1.60	2.00-6.00 0.60-6.00 0.60-2.00 0.60-2.00	0.20-0.22 0.17-0.19 0.17-0.22 0.17-0.22	0.0-2.9 0.0-2.9 0.0-2.9 0.0-2.9	2.0-4.0 0.5-1.0 0.0-0.5 0.0-0.5	.37 .37 .37 .37	.37 .37 .37 .37	5	3	86

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
147:													
Baudette-----	5	0-8	5-18	1.30-1.45	2.00-6.00	0.15-0.19	0.0-2.9	1.0-4.0	.28	.28	5	3	86
		8-10	5-27	1.30-1.50	0.60-2.00	0.14-0.20	0.0-2.9	0.5-1.0	.37	.37			
		10-30	18-35	1.25-1.45	0.60-2.00	0.17-0.24	3.0-5.9	0.5-1.0	.37	.37			
		30-80	5-27	1.30-1.60	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.37	.37			
Grygla-----	5	0-6	2-15	1.40-1.60	6.00-20	0.13-0.15	0.0-2.9	1.0-4.0	.15	.15	5	2	134
		6-26	1-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.15	.15			
		26-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
Sago-----	5	0-14	---	0.15-0.25	0.60-6.00	0.35-0.45	0.0-2.9	50-95	---	---	5	2	134
		14-80	6-18	1.50-1.70	0.60-2.00	0.14-0.20	0.0-2.9	0.0-2.0	.28	.28			
158B:													
Zimmerman-----	85	0-6	2-5	1.45-1.65	6.00-20	0.07-0.09	0.0-2.9	0.5-1.0	.17	.17	5	1	220
		6-80	2-10	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.17	.17			
Hiwood-----	6	0-3	1-5	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.15	.15	5	1	250
		3-22	1-10	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.15	.15			
		22-80	1-10	1.55-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
Two Inlets-----	6	0-2	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	0.5-1.0	.10	.15	5	2	134
		2-4	2-10	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.10	.15			
		4-17	5-15	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.10	.15			
		17-80	0-3	1.60-1.80	20-40	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
Redby-----	3	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17			
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			
167B:													
Baudette-----	85	0-8	5-18	1.30-1.45	2.00-6.00	0.15-0.19	0.0-2.9	1.0-4.0	.28	.28	5	3	86
		8-10	5-27	1.30-1.50	0.60-2.00	0.14-0.20	0.0-2.9	0.5-1.0	.37	.37			
		10-30	18-35	1.25-1.45	0.60-2.00	0.17-0.24	3.0-5.9	0.5-1.0	.37	.37			
		30-80	5-27	1.30-1.60	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.37	.37			
Spooner-----	10	0-6	5-18	1.30-1.45	2.00-6.00	0.20-0.22	0.0-2.9	2.0-4.0	.37	.37	5	3	86
		6-15	3-18	1.35-1.55	0.60-6.00	0.17-0.19	0.0-2.9	0.5-1.0	.37	.37			
		15-22	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.37	.37			
		22-60	5-32	1.40-1.60	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.37	.37			
Moranville-----	5	0-8	2-10	1.45-1.60	6.00-20	0.08-0.11	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		8-24	2-5	1.45-1.60	6.00-20	0.05-0.11	0.0-2.9	0.0-0.5	.15	.15			
		24-42	27-35	1.15-1.30	0.20-0.60	0.14-0.20	3.0-5.9	0.0-0.5	.43	.43			
		42-80	15-35	1.15-1.30	0.20-2.00	0.13-0.20	3.0-5.9	0.0-0.5	.43	.43			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
187:													
Haug-----	90	0-10	---	0.13-0.42	0.60-6.00	0.35-0.48	---	50-90	---	---	5	2	134
		10-16	10-18	1.20-1.60	0.60-6.00	0.12-0.24	0.0-2.9	4.0-6.0	.20	.20			
		16-80	10-18	1.40-1.60	0.60-2.00	0.11-0.19	0.0-2.9	0.5-1.0	.20	.20			
Percy-----	5	0-10	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		10-25	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
Cathro-----	3	0-8	---	0.15-0.35	0.20-6.00	0.45-0.55	---	60-85	---	---	2	2	134
		8-40	---	0.15-0.30	0.20-6.00	0.35-0.45	---	60-85	---	---			
		40-80	10-30	1.50-1.70	0.20-2.00	0.11-0.19	0.0-2.9	1.0-5.0	.20	.24			
Boash-----	2	0-9	30-40	1.10-1.40	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	5	4	86
		9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32			
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			
191:													
Epoufette-----	85	0-10	2-10	1.35-1.50	6.00-20	0.06-0.11	0.0-2.9	2.0-6.0	.17	.17	5	2	134
		10-20	8-18	1.40-1.60	2.00-6.00	0.08-0.14	0.0-2.9	0.0-0.5	.15	.17			
		20-60	0-8	1.40-1.65	6.00-40	0.01-0.03	0.0-2.9	0.0-0.5	.10	.15			
Cormant-----	5	0-6	3-10	1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
Leafriver-----	5	0-13	---	0.10-0.25	0.60-6.00	0.35-0.50	---	50-90	---	---	5	2	134
		13-80	0-10	1.50-1.65	6.00-20	0.03-0.08	0.0-2.9	0.5-5.0	.17	.17			
Meehan-----	5	0-8	4-10	1.35-1.65	2.00-6.00	0.10-0.12	0.0-2.9	0.5-3.0	.17	.17	5	2	134
		8-31	4-9	1.60-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		31-80	1-4	1.60-1.70	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
202:													
Meehan-----	85	0-8	4-10	1.35-1.65	2.00-6.00	0.10-0.12	0.0-2.9	0.5-3.0	.17	.17	5	2	134
		8-31	4-9	1.60-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		31-80	1-4	1.60-1.70	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
Cormant-----	8	0-6	3-10	1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
Wurtsmith-----	5	0-5	3-8	1.50-1.65	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		5-45	2-7	1.35-1.65	6.00-20	0.05-0.11	0.0-2.9	0.0-0.5	.15	.15			
		45-80	0-4	1.50-1.70	6.00-20	0.04-0.07	0.0-2.9	0.0-0.5	.15	.15			
Leafriver-----	2	0-13	---	0.10-0.25	0.60-6.00	0.35-0.50	---	50-90	---	---	5	2	134
		13-80	0-10	1.50-1.65	6.00-20	0.03-0.08	0.0-2.9	0.5-5.0	.17	.17			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
205:													
Karlstad-----	85	0-7	1-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-4.0	.17	.17	3	2	134
		7-10	5-18	1.35-1.60	2.00-6.00	0.13-0.18	0.0-2.9	0.5-2.0	.24	.24			
		10-14	5-18	1.50-1.70	2.00-6.00	0.12-0.16	0.0-2.9	0.0-0.5	.10	.17			
		14-80	1-5	1.50-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.17			
Sahkahtay-----	7	0-4	5-15	1.35-1.50	2.00-6.00	0.10-0.14	0.0-2.9	2.0-4.0	.20	.20	5	3	86
		4-8	2-10	1.45-1.55	6.00-20	0.05-0.08	0.0-2.9	0.5-1.0	.15	.15			
		8-14	18-30	1.40-1.55	0.60-2.00	0.13-0.17	3.0-5.9	0.5-1.0	.28	.28			
		14-80	1-8	1.50-1.70	20-40	0.03-0.06	0.0-2.9	0.0-0.5	.10	.15			
Marquette-----	5	0-7	1-10	1.40-1.60	6.00-20	0.10-0.14	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		7-16	5-18	1.50-1.70	2.00-6.00	0.10-0.16	0.0-2.9	0.5-1.0	.15	.20			
		16-80	1-5	1.50-1.70	20-60	0.02-0.04	0.0-2.9	0.0-0.5	.05	.15			
Redby-----	2	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17			
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			
Pits, gravel-----	1	---	---	---	---	---	---	---	---	---	-	---	---
242B:													
Marquette-----	85	0-7	1-10	1.40-1.60	6.00-20	0.10-0.14	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		7-16	5-18	1.50-1.70	2.00-6.00	0.10-0.16	0.0-2.9	0.5-1.0	.15	.20			
		16-80	1-5	1.50-1.70	20-60	0.02-0.04	0.0-2.9	0.0-0.5	.05	.15			
Karlstad-----	14	0-7	1-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-4.0	.17	.17	3	2	134
		7-10	5-18	1.35-1.60	2.00-6.00	0.13-0.18	0.0-2.9	0.5-2.0	.24	.24			
		10-14	5-18	1.50-1.70	2.00-6.00	0.12-0.16	0.0-2.9	0.0-0.5	.10	.17			
		14-80	1-5	1.50-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.17			
Pits, gravel-----	1	---	---	---	---	---	---	---	---	---	-	---	---
280:													
Pelan-----	85	0-6	5-20	1.35-1.55	2.00-6.00	0.10-0.13	0.0-2.9	0.5-3.0	.24	.24	5	3	86
		6-12	15-25	1.50-1.65	6.00-20	0.05-0.11	0.0-2.9	0.5-1.0	.20	.24			
		12-24	1-8	1.55-1.70	6.00-20	0.02-0.09	0.0-2.9	0.0-0.5	.20	.20			
		24-60	8-18	1.40-1.75	0.60-2.00	0.14-0.18	0.0-2.9	0.0-0.5	.28	.28			
Strandquist-----	10	0-8	10-25	1.20-1.70	0.60-2.00	0.14-0.18	3.0-5.9	2.0-6.0	.28	.32	3	4L	86
		8-35	1-8	1.50-1.70	6.00-20	0.03-0.05	0.0-2.9	1.0-3.0	.10	.15			
		35-80	15-30	1.30-1.65	0.60-2.00	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37			
Garnes-----	3	0-9	5-20	1.40-1.60	2.00-6.00	0.14-0.18	0.0-2.9	0.5-2.0	.32	.32	5	3	86
		9-14	18-30	1.50-1.65	0.60-2.00	0.17-0.20	3.0-5.9	0.5-1.0	.32	.32			
		14-80	10-27	1.60-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.32	.32			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
280:													
Marquette-----	1	0-7	1-10	1.40-1.60	6.00-20	0.10-0.14	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		7-16	5-18	1.50-1.70	2.00-6.00	0.10-0.16	0.0-2.9	0.5-1.0	.15	.20			
		16-80	1-5	1.50-1.70	20-60	0.02-0.04	0.0-2.9	0.0-0.5	.05	.15			
Pits, gravel-----	1	---	---	---	---	---	---	---	---	---	-	---	---
379:													
Percy, very cobbly----	90	0-8	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		8-23	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		23-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
Boash-----	3	0-9	30-40	1.10-1.40	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	5	4	86
		9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32			
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			
Strandquist-----	3	0-8	10-25	1.20-1.70	0.60-2.00	0.14-0.18	3.0-5.9	2.0-6.0	.28	.32	3	4L	86
		8-35	1-8	1.50-1.70	6.00-20	0.03-0.05	0.0-2.9	1.0-3.0	.10	.15			
		35-80	15-30	1.30-1.65	0.60-2.00	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37			
Haug-----	2	0-10	---	0.13-0.42	0.60-6.00	0.35-0.48	---	50-90	---	---	5	2	134
		10-16	10-18	1.20-1.60	0.60-6.00	0.12-0.24	0.0-2.9	4.0-6.0	.20	.20			
		16-80	10-18	1.40-1.60	0.60-2.00	0.11-0.19	0.0-2.9	0.5-1.0	.20	.20			
Skagen, very cobbly----	2	0-10	10-18	1.25-1.40	0.60-2.00	0.16-0.18	0.0-2.9	4.0-9.0	.20	.24	5	4L	86
		10-28	10-18	1.30-1.50	0.60-6.00	0.11-0.18	0.0-2.9	0.5-2.0	.24	.28			
		28-80	10-18	1.30-1.50	0.60-6.00	0.11-0.18	0.0-2.9	0.0-0.5	.24	.28			
383:													
Percy-----	90	0-10	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		10-25	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
Boash-----	3	0-9	30-40	1.10-1.40	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	5	4	86
		9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32			
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			
Strandquist-----	3	0-8	10-25	1.20-1.70	0.60-2.00	0.14-0.18	3.0-5.9	2.0-6.0	.28	.32	3	4L	86
		8-35	1-8	1.50-1.70	6.00-20	0.03-0.05	0.0-2.9	1.0-3.0	.10	.15			
		35-80	15-30	1.30-1.65	0.60-2.00	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37			
Haug-----	2	0-10	---	0.13-0.42	0.60-6.00	0.35-0.48	---	50-90	---	---	5	2	134
		10-16	10-18	1.20-1.60	0.60-6.00	0.12-0.24	0.0-2.9	4.0-6.0	.20	.20			
		16-80	10-18	1.40-1.60	0.60-2.00	0.11-0.19	0.0-2.9	0.5-1.0	.20	.20			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
383: Skagen-----	2	0-9	10-18	1.25-1.40	0.60-2.00	0.16-0.18	0.0-2.9	4.0-9.0	.20	.24	5	4L	86
		9-19	10-18	1.30-1.50	0.60-6.00	0.11-0.18	0.0-2.9	0.5-2.0	.24	.28			
		19-80	10-18	1.30-1.50	0.60-6.00	0.11-0.18	0.0-2.9	0.0-0.5	.24	.28			
384: Percy, depressional---	85	0-8	10-18	1.30-1.60	0.60-2.00	0.20-0.22	3.0-5.9	4.0-12	.24	.28	5	4L	86
		8-27	12-18	1.30-1.60	0.60-2.00	0.15-0.19	3.0-5.9	0.0-1.0	.24	.28			
		27-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
Haug-----	7	0-10	---	0.13-0.42	0.60-6.00	0.35-0.48	---	50-90	---	---	5	2	134
		10-16	10-18	1.20-1.60	0.60-6.00	0.12-0.24	0.0-2.9	4.0-6.0	.20	.20			
		16-80	10-18	1.40-1.60	0.60-2.00	0.11-0.19	0.0-2.9	0.5-1.0	.20	.20			
Percy-----	5	0-10	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		10-25	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
Boash-----	3	0-9	30-40	1.10-1.40	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	5	4	86
		9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32			
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			
387: Roliss, depressional--	85	0-8	18-27	1.10-1.50	0.20-2.00	0.17-0.24	3.0-5.9	3.0-8.0	.28	.28	5	6	48
		8-13	18-35	1.30-1.70	0.20-0.60	0.15-0.19	3.0-5.9	1.0-3.0	.28	.28			
		13-80	18-35	1.30-1.70	0.20-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
Haug-----	10	0-10	---	0.13-0.42	0.60-6.00	0.35-0.48	---	50-90	---	---	5	2	134
		10-16	10-18	1.20-1.60	0.60-6.00	0.12-0.24	0.0-2.9	4.0-6.0	.20	.20			
		16-80	10-18	1.40-1.60	0.60-2.00	0.11-0.19	0.0-2.9	0.5-1.0	.20	.20			
Roliss-----	5	0-14	18-27	1.10-1.50	0.60-2.00	0.17-0.24	3.0-5.9	3.0-7.0	.28	.28	5	4L	86
		14-20	18-35	1.30-1.70	0.20-2.00	0.15-0.19	3.0-5.9	1.0-3.0	.28	.28			
		20-80	18-35	1.30-1.70	0.20-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
404: Chilgren-----	85	0-5	5-18	1.30-1.60	2.00-6.00	0.16-0.18	0.0-2.9	1.0-3.0	.28	.28	5	3	86
		5-9	2-18	1.40-1.60	0.60-2.00	0.13-0.22	0.0-2.9	0.5-1.0	.28	.28			
		9-16	18-35	1.30-1.70	0.60-2.00	0.18-0.22	3.0-5.9	0.0-0.5	.28	.28			
		16-80	10-27	1.30-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.28	.28			
Garnes-----	5	0-9	5-20	1.40-1.60	2.00-6.00	0.14-0.18	0.0-2.9	0.5-2.0	.32	.32	5	3	86
		9-14	18-30	1.50-1.65	0.60-2.00	0.17-0.20	3.0-5.9	0.5-1.0	.32	.32			
		14-80	10-27	1.60-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.32	.32			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
404:													
Grygla-----	5	0-6	2-15	1.40-1.60	6.00-20	0.13-0.15	0.0-2.9	1.0-4.0	.15	.15	5	2	134
		6-26	1-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.15	.15			
		26-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
Haug-----	5	0-10	---	0.13-0.42	0.60-6.00	0.35-0.48	---	50-90	---	---	5	2	134
		10-16	10-18	1.20-1.60	0.60-6.00	0.12-0.24	0.0-2.9	4.0-6.0	.20	.20			
		16-80	10-18	1.40-1.60	0.60-2.00	0.11-0.19	0.0-2.9	0.5-1.0	.20	.20			
412:													
Mavie-----	85	0-12	8-18	1.35-1.55	2.00-6.00	0.13-0.15	0.0-2.9	3.0-6.0	.20	.20	3	3	86
		12-18	10-27	1.35-1.55	0.60-2.00	0.12-0.19	0.0-2.9	1.0-3.0	.28	.28			
		18-39	2-10	1.40-1.65	6.00-20	0.03-0.05	0.0-2.9	0.0-0.5	.10	.15			
		39-80	18-35	1.40-1.70	0.20-2.00	0.15-0.21	0.0-2.9	0.0-0.5	.37	.37			
Foxhome-----	5	0-10	10-20	1.35-1.50	2.00-6.00	0.13-0.18	0.0-2.9	3.0-7.0	.20	.20	3	3	86
		10-15	2-10	1.45-1.60	6.00-20	0.07-0.12	0.0-2.9	0.5-1.0	.20	.20			
		15-23	1-5	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-1.0	.05	.15			
		23-80	12-35	1.40-1.70	0.60-2.00	0.15-0.22	0.0-2.9	0.0-0.5	.32	.37			
Northwood-----	5	0-11	---	0.18-0.25	2.00-6.00	0.35-0.45	---	50-85	---	---	5	2	134
		11-16	3-18	1.45-1.65	2.00-20	0.09-0.17	0.0-2.9	1.0-3.0	.15	.15			
		16-25	1-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		25-80	7-30	1.40-1.75	0.60-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			
Percy, very cobbly----	5	0-8	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		8-23	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		23-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
432:													
Strandquist-----	85	0-8	10-25	1.20-1.70	0.60-2.00	0.14-0.18	3.0-5.9	2.0-6.0	.28	.32	3	4L	86
		8-35	1-8	1.50-1.70	6.00-20	0.03-0.05	0.0-2.9	1.0-3.0	.10	.15			
		35-80	15-30	1.30-1.65	0.60-2.00	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37			
Percy, very cobbly----	5	0-8	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		8-23	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		23-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
Haug-----	4	0-10	---	0.13-0.42	0.60-6.00	0.35-0.48	---	50-90	---	---	5	2	134
		10-16	10-18	1.20-1.60	0.60-6.00	0.12-0.24	0.0-2.9	4.0-6.0	.20	.20			
		16-80	10-18	1.40-1.60	0.60-2.00	0.11-0.19	0.0-2.9	0.5-1.0	.20	.20			
Boash-----	3	0-9	30-40	1.10-1.40	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	5	4	86
		9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32			
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
432:													
Foxhome-----	3	0-10	10-20	1.35-1.50	2.00-6.00	0.13-0.18	0.0-2.9	3.0-7.0	.20	.20	3	3	86
		10-15	2-10	1.45-1.60	6.00-20	0.07-0.12	0.0-2.9	0.5-1.0	.20	.20			
		15-23	1-5	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-1.0	.05	.15			
		23-80	12-35	1.40-1.70	0.60-2.00	0.15-0.22	0.0-2.9	0.0-0.5	.32	.37			
433:													
Syrene, depressional--	85	0-12	8-18	1.25-1.45	2.00-6.00	0.13-0.18	0.0-2.9	3.0-10	.20	.20	3	3	86
		12-18	10-30	1.30-1.50	2.00-6.00	0.15-0.19	0.0-2.9	0.0-1.0	.37	.37			
		18-80	2-10	1.50-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.10			
Deerwood-----	5	0-14	0-0	0.10-0.30	0.60-6.00	0.35-0.45	---	50-90	---	---	5	2	134
		14-16	2-18	1.20-1.70	2.00-20	0.09-0.17	0.0-2.9	4.0-10	.17	.17			
		16-80	0-10	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-2.0	.17	.17			
Rosewood-----	5	0-11	8-18	1.20-1.40	2.00-6.00	0.13-0.18	0.0-2.9	4.0-7.0	.24	.24	3	3	86
		11-19	6-18	1.20-1.40	2.00-6.00	0.11-0.15	0.0-2.9	1.0-3.0	.24	.24			
		19-65	1-6	1.45-1.65	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
		65-80	1-6	1.40-1.65	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
Syrene-----	5	0-11	8-18	1.25-1.45	2.00-6.00	0.13-0.18	0.0-2.9	3.0-8.0	.20	.20	3	3	86
		11-19	10-30	1.30-1.50	2.00-6.00	0.15-0.19	0.0-2.9	0.0-2.0	.37	.37			
		19-80	2-10	1.50-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.10			
435:													
Syrene-----	85	0-11	8-18	1.25-1.45	2.00-6.00	0.13-0.18	0.0-2.9	3.0-8.0	.20	.20	3	3	86
		11-19	10-30	1.30-1.50	2.00-6.00	0.15-0.19	0.0-2.9	0.0-2.0	.37	.37			
		19-80	2-10	1.50-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.10			
Rosewood-----	5	0-11	8-18	1.20-1.40	2.00-6.00	0.13-0.18	0.0-2.9	4.0-7.0	.24	.24	3	3	86
		11-19	6-18	1.20-1.40	2.00-6.00	0.11-0.15	0.0-2.9	1.0-3.0	.24	.24			
		19-65	1-6	1.45-1.65	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
		65-80	1-6	1.40-1.65	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
Syrene, depressional--	5	0-12	8-18	1.25-1.45	2.00-6.00	0.13-0.18	0.0-2.9	3.0-10	.20	.20	3	3	86
		12-18	10-30	1.30-1.50	2.00-6.00	0.15-0.19	0.0-2.9	0.0-1.0	.37	.37			
		18-80	2-10	1.50-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.10			
Karlsruhe-----	3	0-8	5-15	1.10-1.40	2.00-6.00	0.10-0.15	0.0-2.9	4.0-7.0	.20	.20	5	3	86
		8-16	5-15	1.20-1.50	2.00-20	0.09-0.14	0.0-2.9	1.0-3.0	.20	.20			
		16-80	0-5	1.30-1.60	6.00-40	0.02-0.07	0.0-2.9	0.0-0.5	.10	.15			
Deerwood-----	2	0-14	0-0	0.10-0.30	0.60-6.00	0.35-0.45	---	50-90	---	---	5	2	134
		14-16	2-18	1.20-1.70	2.00-20	0.09-0.17	0.0-2.9	4.0-10	.17	.17			
		16-80	0-10	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-2.0	.17	.17			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
439:		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
Strathcona-----	85	0-10	5-18	1.25-1.45	2.00-6.00	0.14-0.17	0.0-2.9	3.0-6.0	.20	.20	3	3	86
		10-17	10-18	1.30-1.50	2.00-6.00	0.14-0.16	0.0-2.9	0.5-1.0	.24	.24			
		17-28	2-8	1.35-1.60	6.00-20	0.05-0.09	0.0-2.9	0.0-0.5	.10	.10			
		28-80	15-30	1.40-1.60	0.20-2.00	0.14-0.18	3.0-5.9	0.0-0.5	.32	.32			
Northwood-----	5	0-11	---	0.18-0.25	2.00-6.00	0.35-0.45	---	50-85	---	---	5	2	134
		11-16	3-18	1.45-1.65	2.00-20	0.09-0.17	0.0-2.9	1.0-3.0	.15	.15			
		16-25	1-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		25-80	7-30	1.40-1.75	0.60-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			
Percy-----	5	0-10	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		10-25	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
Grimstad-----	3	0-10	10-18	1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	5	3	86
		10-30	2-15	1.45-1.60	6.00-20	0.08-0.14	0.0-2.9	1.0-2.0	.20	.20			
		30-80	10-30	1.50-1.65	0.60-2.00	0.11-0.19	0.0-2.9	0.0-0.5	.37	.37			
Strandquist-----	2	0-8	10-25	1.20-1.70	0.60-2.00	0.14-0.18	3.0-5.9	2.0-6.0	.28	.32	3	4L	86
		8-35	1-8	1.50-1.70	6.00-20	0.03-0.05	0.0-2.9	1.0-3.0	.10	.15			
		35-80	15-30	1.30-1.65	0.60-2.00	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37			
481:													
Kratka-----	85	0-8	5-15	1.20-1.50	2.00-6.00	0.13-0.18	0.0-2.9	2.0-5.0	.20	.20	3	3	86
		8-22	2-10	1.30-1.60	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.17	.17			
		22-80	10-30	1.50-1.80	0.20-2.00	0.11-0.19	3.0-5.9	0.0-0.5	.37	.37			
Northwood-----	5	0-11	---	0.18-0.25	2.00-6.00	0.35-0.45	---	50-85	---	---	5	2	134
		11-16	3-18	1.45-1.65	2.00-20	0.09-0.17	0.0-2.9	1.0-3.0	.15	.15			
		16-25	1-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		25-80	7-30	1.40-1.75	0.60-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			
Percy-----	5	0-10	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		10-25	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
Enstrom-----	3	0-6	4-15	1.30-1.50	6.00-20	0.10-0.12	0.0-2.9	0.5-4.0	.17	.17	5	2	134
		6-29	1-12	1.40-1.65	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.15	.15			
		29-80	10-35	1.50-1.65	0.20-2.00	0.17-0.20	3.0-5.9	0.0-0.5	.37	.37			
Strandquist-----	2	0-8	10-25	1.20-1.70	0.60-2.00	0.14-0.18	3.0-5.9	2.0-6.0	.28	.32	3	4L	86
		8-35	1-8	1.50-1.70	6.00-20	0.03-0.05	0.0-2.9	1.0-3.0	.10	.15			
		35-80	15-30	1.30-1.65	0.60-2.00	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
482:													
Grygla-----	85	0-6	2-15	1.40-1.60	6.00-20	0.13-0.15	0.0-2.9	1.0-4.0	.15	.15	5	2	134
		6-26	1-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.15	.15			
		26-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
Chilgren-----	5	0-5	5-18	1.30-1.60	2.00-6.00	0.16-0.18	0.0-2.9	1.0-3.0	.28	.28	5	3	86
		5-9	2-18	1.40-1.60	0.60-2.00	0.13-0.22	0.0-2.9	0.5-1.0	.28	.28			
		9-16	18-35	1.30-1.70	0.60-2.00	0.18-0.22	3.0-5.9	0.0-0.5	.28	.28			
		16-80	10-27	1.30-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.28	.28			
Grygla, depressional--	5	0-5	2-15	1.40-1.60	6.00-20	0.10-0.15	0.0-2.9	1.0-10	.15	.15	5	2	134
		5-36	1-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-1.0	.15	.15			
		36-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
Enstrom-----	3	0-6	4-15	1.30-1.50	6.00-20	0.10-0.12	0.0-2.9	0.5-4.0	.17	.17	5	2	134
		6-29	1-12	1.40-1.65	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.15	.15			
		29-80	10-35	1.50-1.65	0.20-2.00	0.17-0.20	3.0-5.9	0.0-0.5	.37	.37			
Northwood-----	2	0-11	---	0.18-0.25	2.00-6.00	0.35-0.45	---	50-85	---	---	5	2	134
		11-16	3-18	1.45-1.65	2.00-20	0.09-0.17	0.0-2.9	1.0-3.0	.15	.15			
		16-25	1-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		25-80	7-30	1.40-1.75	0.60-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			
532:													
Sago-----	90	0-14	---	0.15-0.25	0.60-6.00	0.35-0.45	0.0-2.9	50-95	---	---	5	2	134
		14-80	6-18	1.50-1.70	0.60-2.00	0.14-0.20	0.0-2.9	0.0-2.0	.28	.28			
Cathro-----	5	0-8	---	0.15-0.35	0.20-6.00	0.45-0.55	---	60-85	---	---	2	2	134
		8-40	---	0.15-0.30	0.20-6.00	0.35-0.45	---	60-85	---	---			
		40-80	10-30	1.50-1.70	0.20-2.00	0.11-0.19	0.0-2.9	1.0-5.0	.20	.24			
Zippel-----	5	0-10	10-18	1.35-1.50	2.00-6.00	0.16-0.22	0.0-2.9	2.0-6.0	.28	.28	5	3	86
		10-16	5-18	1.40-1.55	2.00-6.00	0.15-0.20	0.0-2.9	0.0-1.0	.37	.37			
		16-80	5-18	1.40-1.55	2.00-6.00	0.15-0.20	0.0-2.9	0.0-0.5	.37	.37			
534:													
Mooselake-----	90	0-16	---	0.05-0.25	0.60-6.00	0.35-0.55	---	25-99	---	---	3	5	56
		16-80	---	0.10-0.20	0.60-6.00	0.40-0.50	---	25-99	---	---			
Bullwinkle-----	4	0-16	0-0	0.15-0.35	0.20-6.00	0.35-0.48	---	60-85	---	---	2	2	134
		16-48	0-0	0.15-0.35	2.00-6.00	0.35-0.48	---	60-85	---	---			
		48-80	15-25	1.15-1.30	0.60-2.00	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43			
Dora-----	3	0-8	---	0.15-0.35	0.60-6.00	0.35-0.55	---	21-90	---	---	2	2	134
		8-26	---	0.15-0.35	0.60-6.00	0.35-0.55	---	21-90	---	---			
		26-80	35-70	1.40-1.65	0.0000-0.06	0.10-0.20	6.0-8.9	0.0-0.5	.32	.32			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
534:													
Tawas-----	3	0-10	---	0.15-0.35	0.20-6.00	0.35-0.45	---	40-60	---	---	2	2	134
		10-27	---	0.15-0.35	0.20-6.00	0.35-0.45	---	40-60	---	---			
		27-80	0-10	1.40-1.65	6.00-20	0.03-0.10	0.0-2.9	---	.15	.15			
540:													
Seelyeville-----	90	0-12	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	3	2	134
		12-80	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---			
Cathro-----	4	0-8	---	0.15-0.35	0.20-6.00	0.45-0.55	---	60-85	---	---	2	2	134
		8-40	---	0.15-0.30	0.20-6.00	0.35-0.45	---	60-85	---	---			
		40-80	10-30	1.50-1.70	0.20-2.00	0.11-0.19	0.0-2.9	1.0-5.0	.20	.24			
Dora-----	3	0-5	---	0.15-0.35	0.60-6.00	0.35-0.55	---	21-90	---	---	2	2	134
		5-31	---	0.15-0.35	0.60-6.00	0.35-0.55	---	21-90	---	---			
		31-80	35-70	1.40-1.65	0.0000-0.06	0.10-0.20	6.0-8.9	0.0-0.5	.32	.32			
Markey-----	3	0-42	---	0.15-0.35	0.20-6.00	0.35-0.45	---	55-85	---	---	2	2	134
		42-80	0-10	1.40-1.65	6.00-20	0.03-0.08	0.0-2.9	0.0-0.5	.15	.15			
541:													
Rifle-----	90	0-8	---	0.10-0.25	0.60-6.00	0.48-0.58	---	75-99	---	---	3	5	56
		8-80	---	0.08-0.20	0.60-6.00	0.48-0.58	---	25-99	---	---			
Tacoosh-----	10	0-17	0-0	0.10-0.20	0.60-6.00	0.45-0.55	---	75-99	---	---	2	5	56
		17-33	0-0	0.10-0.20	0.60-6.00	0.45-0.55	---	75-99	---	---			
		33-80	15-35	1.40-1.65	0.20-2.00	0.16-0.22	3.0-5.9	0.0-0.5	.43	.43			
543:													
Markey-----	90	0-42	---	0.15-0.35	0.20-6.00	0.35-0.45	---	55-85	---	---	2	2	134
		42-80	0-10	1.40-1.65	6.00-20	0.03-0.08	0.0-2.9	0.0-0.5	.15	.15			
Cormant-----	5	0-6	3-10	1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
Seelyeville-----	5	0-12	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	3	2	134
		12-80	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---			
544:													
Cathro-----	90	0-8	---	0.15-0.35	0.20-6.00	0.45-0.55	---	60-85	---	---	2	2	134
		8-40	---	0.15-0.30	0.20-6.00	0.35-0.45	---	60-85	---	---			
		40-80	10-30	1.50-1.70	0.20-2.00	0.11-0.19	0.0-2.9	1.0-5.0	.20	.24			
Percy, very cobbly----	4	0-8	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		8-23	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		23-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
544:													
Grygla-----	3	0-6	2-15	1.40-1.60	6.00-20	0.13-0.15	0.0-2.9	1.0-4.0	.15	.15	5	2	134
		6-26	1-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.15	.15			
		26-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
Seelyeville-----	3	0-12	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	3	2	134
		12-80	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---			
546:													
Lupton-----	90	0-16	0-0	0.10-0.35	0.20-6.00	0.35-0.45	---	70-90	---	---	3	2	134
		16-80	0-0	0.10-0.35	0.20-6.00	0.35-0.45	---	---	---	---			
Bullwinkle-----	4	0-16	0-0	0.15-0.35	0.20-6.00	0.35-0.48	---	60-85	---	---	2	2	134
		16-48	0-0	0.15-0.35	2.00-6.00	0.35-0.48	---	60-85	---	---			
		48-80	15-25	1.15-1.30	0.60-2.00	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43			
Dora-----	3	0-8	---	0.15-0.35	0.60-6.00	0.35-0.55	---	21-90	---	---	2	2	134
		8-26	---	0.15-0.35	0.60-6.00	0.35-0.55	---	21-90	---	---			
		26-80	35-70	1.40-1.65	0.0000-0.06	0.10-0.20	6.0-8.9	0.0-0.5	.32	.32			
Tawas-----	3	0-10	---	0.15-0.35	0.20-6.00	0.35-0.45	---	40-60	---	---	2	2	134
		10-27	---	0.15-0.35	0.20-6.00	0.35-0.45	---	40-60	---	---			
		27-80	0-10	1.40-1.65	6.00-20	0.03-0.10	0.0-2.9	---	.15	.15			
547:													
Deerwood-----	90	0-14	0-0	0.10-0.30	0.60-6.00	0.35-0.45	---	50-90	---	---	5	2	134
		14-16	2-18	1.20-1.70	2.00-20	0.09-0.17	0.0-2.9	4.0-10	.17	.17			
		16-80	0-10	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-2.0	.17	.17			
Markey-----	4	0-42	---	0.15-0.35	0.20-6.00	0.35-0.45	---	55-85	---	---	2	2	134
		42-80	0-10	1.40-1.65	6.00-20	0.03-0.08	0.0-2.9	0.0-0.5	.15	.15			
Rosewood-----	3	0-11	8-18	1.20-1.40	2.00-6.00	0.13-0.18	0.0-2.9	4.0-7.0	.24	.24	3	3	86
		11-19	6-18	1.20-1.40	2.00-6.00	0.11-0.15	0.0-2.9	1.0-3.0	.24	.24			
		19-65	1-6	1.45-1.65	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
		65-80	1-6	1.40-1.65	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
Syrene-----	3	0-11	8-18	1.25-1.45	2.00-6.00	0.13-0.18	0.0-2.9	3.0-8.0	.20	.20	3	3	86
		11-19	10-30	1.30-1.50	2.00-6.00	0.15-0.19	0.0-2.9	0.0-2.0	.37	.37			
		19-80	2-10	1.50-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.10			
550:													
Dora-----	90	0-5	---	0.15-0.35	0.60-6.00	0.35-0.55	---	21-90	---	---	2	2	134
		5-31	---	0.15-0.35	0.60-6.00	0.35-0.55	---	21-90	---	---			
		31-80	35-70	1.40-1.65	0.0000-0.06	0.10-0.20	6.0-8.9	0.0-0.5	.32	.32			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
550:													
Boash-----	4	0-9	30-40	1.10-1.40	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	5	4	86
		9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32			
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			
Seelyeville-----	3	0-12	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	3	2	134
		12-80	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---			
Woodslake-----	3	0-8	41-65	1.45-1.65	0.06-0.60	0.10-0.14	6.0-8.9	3.0-5.0	.28	.28	5	4	86
		8-15	60-85	1.35-1.45	0.0000-0.06	0.09-0.13	6.0-8.9	0.5-1.0	.28	.28			
		15-36	60-85	1.35-1.45	0.02-0.06	0.09-0.13	6.0-8.9	0.0-0.5	.28	.28			
		36-80	25-50	1.30-1.45	0.02-0.06	0.09-0.22	6.0-8.9	0.0-0.5	.43	.43			
561:													
Bullwinkle-----	90	0-16	0-0	0.15-0.35	0.20-6.00	0.35-0.48	---	60-85	---	---	2	2	134
		16-48	0-0	0.15-0.35	2.00-6.00	0.35-0.48	---	60-85	---	---			
		48-80	15-25	1.15-1.30	0.60-2.00	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43			
Lupton-----	4	0-16	0-0	0.10-0.35	0.20-6.00	0.35-0.45	---	70-90	---	---	3	2	134
		16-80	0-0	0.10-0.35	0.20-6.00	0.35-0.45	---	---	---	---			
Northwood, wooded-----	4	0-15	---	0.18-0.25	2.00-6.00	0.35-0.45	---	50-85	---	---	5	2	134
		15-21	3-18	1.45-1.65	2.00-20	0.09-0.17	0.0-2.9	1.0-3.0	.15	.15			
		21-39	1-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		39-80	7-30	1.40-1.75	0.60-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			
Chilgren-----	2	0-5	5-18	1.30-1.60	2.00-6.00	0.16-0.18	0.0-2.9	1.0-3.0	.28	.28	5	3	86
		5-9	2-18	1.40-1.60	0.60-2.00	0.13-0.22	0.0-2.9	0.5-1.0	.28	.28			
		9-16	18-35	1.30-1.70	0.60-2.00	0.18-0.22	3.0-5.9	0.0-0.5	.28	.28			
		16-80	10-27	1.30-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.28	.28			
563:													
Northwood-----	90	0-11	---	0.18-0.25	2.00-6.00	0.35-0.45	---	50-85	---	---	5	2	134
		11-16	3-18	1.45-1.65	2.00-20	0.09-0.17	0.0-2.9	1.0-3.0	.15	.15			
		16-25	1-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		25-80	7-30	1.40-1.75	0.60-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			
Grygla-----	4	0-6	2-15	1.40-1.60	6.00-20	0.13-0.15	0.0-2.9	1.0-4.0	.15	.15	5	2	134
		6-26	1-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.15	.15			
		26-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
Berner-----	3	0-23	---	0.15-0.35	0.20-6.00	0.35-0.48	---	80-95	---	---	2	2	134
		23-41	0-5	1.50-1.75	6.00-20	0.05-0.10	0.0-2.9	0.0-0.5	.05	.15			
		41-80	10-27	1.45-1.65	0.20-2.00	0.14-0.22	3.0-5.9	0.0-0.5	.32	.37			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
563: Strandquist-----	3	0-8	10-25	1.20-1.70	0.60-2.00	0.14-0.18	3.0-5.9	2.0-6.0	.28	.32	3	4L	86
		8-35	1-8	1.50-1.70	6.00-20	0.03-0.05	0.0-2.9	1.0-3.0	.10	.15			
		35-80	15-30	1.30-1.65	0.60-2.00	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37			
565: Eckvoll-----	85	0-6	5-15	1.30-1.70	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		6-21	2-10	1.30-1.70	6.00-20	0.06-0.08	0.0-2.9	0.5-1.0	.15	.15			
		21-26	18-35	1.40-1.70	0.20-2.00	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
		26-80	16-32	1.30-1.70	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
Chilgren-----	5	0-5	5-18	1.30-1.60	2.00-6.00	0.16-0.18	0.0-2.9	1.0-3.0	.28	.28	5	3	86
		5-9	2-18	1.40-1.60	0.60-2.00	0.13-0.22	0.0-2.9	0.5-1.0	.28	.28			
		9-16	18-35	1.30-1.70	0.60-2.00	0.18-0.22	3.0-5.9	0.0-0.5	.28	.28			
		16-80	10-27	1.30-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.28	.28			
Grygla-----	5	0-6	2-15	1.40-1.60	6.00-20	0.13-0.15	0.0-2.9	1.0-4.0	.15	.15	5	2	134
		6-26	1-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.15	.15			
		26-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
Hiwood-----	5	0-3	1-5	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.15	.15	5	1	250
		3-22	1-10	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.15	.15			
		22-80	1-10	1.55-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
568: Zippel-----	85	0-10	10-18	1.35-1.50	2.00-6.00	0.16-0.22	0.0-2.9	2.0-6.0	.28	.28	5	3	86
		10-16	5-18	1.40-1.55	2.00-6.00	0.15-0.20	0.0-2.9	0.0-1.0	.37	.37			
		16-80	5-18	1.40-1.55	2.00-6.00	0.15-0.20	0.0-2.9	0.0-0.5	.37	.37			
Augsburg, depressional	5	0-9	10-27	1.20-1.40	0.60-2.00	0.20-0.23	0.0-2.9	5.0-8.0	.28	.28	5	4L	86
		9-16	5-18	1.30-1.50	2.00-6.00	0.20-0.23	0.0-2.9	1.0-3.0	.28	.28			
		16-32	5-18	1.40-1.60	2.00-6.00	0.17-0.22	0.0-2.9	0.5-1.0	.28	.28			
		32-80	35-85	1.10-1.40	0.0000-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28			
Sago-----	5	0-14	---	0.15-0.25	0.60-6.00	0.35-0.45	0.0-2.9	50-95	---	---	5	2	134
		14-80	6-18	1.50-1.70	0.60-2.00	0.14-0.20	0.0-2.9	0.0-2.0	.28	.28			
Skime-----	5	0-6	5-10	1.35-1.50	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		6-17	2-10	1.35-1.50	6.00-20	0.08-0.11	0.0-2.9	0.0-1.0	.15	.15			
		17-22	10-18	1.25-1.40	2.00-6.00	0.12-0.17	0.0-2.9	0.0-0.5	.24	.24			
		22-72	2-5	1.50-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
		72-80	2-18	1.50-1.70	0.60-20	0.05-0.22	0.0-2.9	0.0-0.5	.15	.15			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
569:													
Wabanica-----	85	0-8	15-27	1.35-1.55	0.60-2.00	0.17-0.22	0.0-2.9	2.0-4.0	.28	.28	5	4L	86
		8-19	18-35	1.35-1.60	0.60-2.00	0.17-0.22	0.0-2.9	0.5-1.0	.28	.28			
		19-80	18-35	1.45-1.65	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.28	.28			
Warroad-----	6	0-11	5-15	1.25-1.35	2.00-6.00	0.13-0.18	0.0-2.9	2.0-5.0	.24	.24	3	3	86
		11-26	2-10	1.45-1.60	6.00-20	0.05-0.11	0.0-2.9	0.5-1.0	.17	.17			
		26-80	18-35	1.15-1.30	0.20-2.00	0.19-0.21	3.0-5.9	0.0-0.5	.43	.43			
Sax-----	4	0-15	0-1	0.15-0.25	0.20-6.00	0.35-0.45	---	25-70	---	---	5	2	134
		15-24	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	1.0-15	.28	.28			
		24-39	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	0.5-1.0	.43	.43			
		39-71	10-35	1.30-1.55	0.60-2.00	0.14-0.22	0.0-2.9	0.0-0.5	.43	.43			
		71-80	27-60	1.30-1.60	0.06-0.60	0.09-0.19	6.0-8.9	0.0-0.5	.43	.43			
Grano-----	3	0-11	10-27	1.30-1.60	0.60-6.00	0.10-0.16	0.0-2.9	2.0-5.0	.24	.24	5	5	56
		11-41	35-60	1.20-1.50	0.06-0.20	0.15-0.18	6.0-8.9	1.0-3.0	.32	.32			
		41-80	22-60	1.20-1.60	0.06-0.20	0.15-0.18	6.0-8.9	0.0-0.5	.32	.32			
Enstrom-----	2	0-6	4-15	1.30-1.50	6.00-20	0.10-0.12	0.0-2.9	0.5-4.0	.17	.17	5	2	134
		6-29	1-12	1.40-1.65	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.15	.15			
		29-80	10-35	1.50-1.65	0.20-2.00	0.17-0.20	3.0-5.9	0.0-0.5	.37	.37			
570:													
Faunce-----	85	0-2	3-10	1.40-1.60	6.00-20	0.10-0.13	0.0-2.9	1.0-2.0	.17	.17	5	2	134
		2-14	3-10	1.45-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.10	.10			
		14-24	3-10	1.45-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.10	.15			
		24-80	0-5	1.45-1.75	6.00-20	0.03-0.06	0.0-2.9	0.0-0.5	.10	.15			
Clearriver-----	7	0-2	5-15	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-2.0	.17	.17	5	2	134
		2-21	3-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		21-80	1-5	1.55-1.70	6.00-20	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15			
Zimmerman-----	4	0-6	2-5	1.45-1.65	6.00-20	0.07-0.09	0.0-2.9	0.5-1.0	.17	.17	5	1	220
		6-80	2-10	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.17	.17			
Meehan-----	3	0-8	4-10	1.35-1.65	2.00-6.00	0.10-0.12	0.0-2.9	0.5-3.0	.17	.17	5	2	134
		8-31	4-9	1.60-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		31-80	1-4	1.60-1.70	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
Pits, gravel-----	1	---	---	---	---	---	---	---	---	---	-	---	---
581:													
Percy-----	90	0-11	10-20	1.30-1.60	2.00-6.00	0.13-0.18	0.0-2.9	4.0-9.0	.24	.28	5	3	86
		11-15	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		15-60	7-18	1.40-1.60	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
581:													
Haug-----	5	0-10	---	0.13-0.42	0.60-6.00	0.35-0.48	---	50-90	---	---	5	2	134
		10-16	10-18	1.20-1.60	0.60-6.00	0.12-0.24	0.0-2.9	4.0-6.0	.20	.20			
		16-80	10-18	1.40-1.60	0.60-2.00	0.11-0.19	0.0-2.9	0.5-1.0	.20	.20			
Boash-----	3	0-9	30-40	1.10-1.40	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	5	4	86
		9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32			
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			
Skagen-----	2	0-9	10-18	1.25-1.40	0.60-2.00	0.16-0.18	0.0-2.9	4.0-9.0	.20	.24	5	4L	86
		9-19	10-18	1.30-1.50	0.60-6.00	0.11-0.18	0.0-2.9	0.5-2.0	.24	.28			
		19-80	10-18	1.30-1.50	0.60-6.00	0.11-0.18	0.0-2.9	0.0-0.5	.24	.28			
582:													
Roliss-----	85	0-14	18-27	1.10-1.50	0.60-2.00	0.17-0.24	3.0-5.9	3.0-7.0	.28	.28	5	4L	86
		14-20	18-35	1.30-1.70	0.20-2.00	0.15-0.19	3.0-5.9	1.0-3.0	.28	.28			
		20-80	18-35	1.30-1.70	0.20-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
Roliss, depressional--	7	0-8	18-27	1.10-1.50	0.20-2.00	0.17-0.24	3.0-5.9	3.0-8.0	.28	.28	5	6	48
		8-13	18-35	1.30-1.70	0.20-0.60	0.15-0.19	3.0-5.9	1.0-3.0	.28	.28			
		13-80	18-35	1.30-1.70	0.20-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
Boash-----	5	0-9	30-40	1.10-1.40	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	5	4	86
		9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32			
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			
Haug-----	3	0-10	---	0.13-0.42	0.60-6.00	0.35-0.48	---	50-90	---	---	5	2	134
		10-16	10-18	1.20-1.60	0.60-6.00	0.12-0.24	0.0-2.9	4.0-6.0	.20	.20			
		16-80	10-18	1.40-1.60	0.60-2.00	0.11-0.19	0.0-2.9	0.5-1.0	.20	.20			
583:													
Nereson-----	85	0-7	7-12	1.35-1.45	2.00-6.00	0.14-0.17	0.0-2.9	4.0-6.0	.17	.20	5	3	86
		7-11	10-18	1.35-1.45	0.60-2.00	0.18-0.22	0.0-2.9	0.5-1.0	.24	.28			
		11-29	12-18	1.50-1.65	0.60-6.00	0.16-0.18	0.0-2.9	0.0-0.5	.24	.28			
		29-80	12-18	1.50-1.65	0.60-6.00	0.16-0.18	0.0-2.9	0.0-0.5	.24	.28			
Percy-----	10	0-10	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		10-25	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
Pelan-----	3	0-6	5-20	1.35-1.55	2.00-6.00	0.10-0.13	0.0-2.9	0.5-3.0	.24	.24	5	3	86
		6-12	15-25	1.50-1.65	6.00-20	0.05-0.11	0.0-2.9	0.5-1.0	.20	.24			
		12-24	1-8	1.55-1.70	6.00-20	0.02-0.09	0.0-2.9	0.0-0.5	.20	.20			
		24-60	8-18	1.40-1.75	0.60-2.00	0.14-0.18	0.0-2.9	0.0-0.5	.28	.28			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
583:		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
Foxhome-----	2	0-10	10-20	1.35-1.50	2.00-6.00	0.13-0.18	0.0-2.9	3.0-7.0	.20	.20	3	3	86
		10-15	2-10	1.45-1.60	6.00-20	0.07-0.12	0.0-2.9	0.5-1.0	.20	.20			
		15-23	1-5	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-1.0	.05	.15			
		23-80	12-35	1.40-1.70	0.60-2.00	0.15-0.22	0.0-2.9	0.0-0.5	.32	.37			
627:													
Tawas-----	90	0-10	---	0.15-0.35	0.20-6.00	0.35-0.45	---	40-60	---	---	2	2	134
		10-27	---	0.15-0.35	0.20-6.00	0.35-0.45	---	40-60	---	---			
		27-80	0-10	1.40-1.65	6.00-20	0.03-0.10	0.0-2.9	---	.15	.15			
Leafriver-----	4	0-10	---	0.10-0.25	0.60-6.00	0.35-0.50	---	50-90	---	---	5	2	134
		10-13	3-18	1.40-1.65	2.00-20	0.08-0.14	0.0-2.9	5.0-20	.17	.17			
		13-80	0-10	1.50-1.65	6.00-20	0.03-0.08	0.0-2.9	0.5-5.0	.17	.17			
Lupton-----	4	0-16	0-0	0.10-0.35	0.20-6.00	0.35-0.45	---	70-90	---	---	3	2	134
		16-80	0-0	0.10-0.35	0.20-6.00	0.35-0.45	---	---	---	---			
Cormant-----	2	0-6	3-10	1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
630:													
Wildwood-----	90	0-12	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	5	2	134
		12-33	35-75	1.35-1.45	0.06-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
		33-80	50-75	1.40-1.55	0.0000-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
Boash-----	4	0-9	30-40	1.10-1.40	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	5	4	86
		9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32			
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			
Dora-----	4	0-5	---	0.15-0.35	0.60-6.00	0.35-0.55	---	21-90	---	---	2	2	134
		5-31	---	0.15-0.35	0.60-6.00	0.35-0.55	---	21-90	---	---			
		31-80	35-70	1.40-1.65	0.0000-0.06	0.10-0.20	6.0-8.9	0.0-0.5	.32	.32			
Espelie-----	2	0-10	8-18	1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	5	3	86
		10-27	3-10	1.35-1.60	2.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.17	.17			
		27-80	35-60	1.35-1.60	0.06-0.20	0.09-0.19	6.0-8.9	0.0-0.5	.32	.32			
643:													
Huot-----	85	0-14	5-15	1.50-1.60	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	5	3	86
		14-26	8-15	1.55-1.65	2.00-6.00	0.09-0.17	0.0-2.9	0.0-1.0	.20	.20			
		26-34	3-8	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.20	.20			
		34-80	35-80	1.35-1.60	0.06-0.20	0.09-0.16	6.0-8.9	0.0-0.5	.32	.32			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
643: Thiefriver-----	12	0-10	8-18	1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.24	.24	5	3	86
		10-16	8-18	1.25-1.40	2.00-20	0.09-0.17	0.0-2.9	0.0-1.0	.28	.28			
		16-35	2-10	1.25-1.40	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.17	.17			
		35-80	35-70	1.35-1.60	0.06-0.20	0.09-0.19	6.0-8.9	0.0-0.5	.32	.32			
Redby-----	3	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17			
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			
644: Boash-----	85	0-9	30-40	1.10-1.40	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	5	4	86
		9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32			
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			
Percy-----	7	0-10	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		10-25	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
Woodslake-----	5	0-8	41-65	1.45-1.65	0.06-0.60	0.10-0.14	6.0-8.9	3.0-5.0	.28	.28	5	4	86
		8-15	60-85	1.35-1.45	0.0000-0.06	0.09-0.13	6.0-8.9	0.5-1.0	.28	.28			
		15-36	60-85	1.35-1.45	0.02-0.06	0.09-0.13	6.0-8.9	0.0-0.5	.28	.28			
		36-80	25-50	1.30-1.45	0.02-0.06	0.09-0.22	6.0-8.9	0.0-0.5	.43	.43			
Strandquist-----	3	0-8	10-25	1.20-1.70	0.60-2.00	0.14-0.18	3.0-5.9	2.0-6.0	.28	.32	3	4L	86
		8-35	1-8	1.50-1.70	6.00-20	0.03-0.05	0.0-2.9	1.0-3.0	.10	.15			
		35-80	15-30	1.30-1.65	0.60-2.00	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37			
645: Espelie-----	85	0-10	8-18	1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	5	3	86
		10-27	3-10	1.35-1.60	2.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.17	.17			
		27-80	35-60	1.35-1.60	0.06-0.20	0.09-0.19	6.0-8.9	0.0-0.5	.32	.32			
Grano-----	5	0-11	10-27	1.30-1.60	0.60-6.00	0.10-0.16	0.0-2.9	2.0-5.0	.24	.24	5	5	56
		11-41	35-60	1.20-1.50	0.06-0.20	0.15-0.18	6.0-8.9	1.0-3.0	.32	.32			
		41-80	22-60	1.20-1.60	0.06-0.20	0.15-0.18	6.0-8.9	0.0-0.5	.32	.32			
Hilaire-----	5	0-13	8-18	1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.15	.20	3	3	86
		13-33	3-10	1.25-1.40	6.00-20	0.07-0.14	0.0-2.9	1.0-2.0	.15	.15			
		33-80	35-60	1.35-1.55	0.06-0.20	0.09-0.19	6.0-9.0	0.0-0.5	.32	.32			
Wildwood-----	5	0-12	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	5	2	134
		12-33	35-75	1.35-1.45	0.06-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
		33-80	50-75	1.40-1.55	0.0000-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									Kw	Kf	T		
651:		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
Thiefriever-----	85	0-10	8-18	1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.24	.24	5	3	86
		10-16	8-18	1.25-1.40	2.00-20	0.09-0.17	0.0-2.9	0.0-1.0	.28	.28			
		16-35	2-10	1.25-1.40	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.17	.17			
		35-80	35-70	1.35-1.60	0.06-0.20	0.09-0.19	6.0-8.9	0.0-0.5	.32	.32			
Grano-----	5	0-11	10-27	1.30-1.60	0.60-6.00	0.10-0.16	0.0-2.9	2.0-5.0	.24	.24	5	5	56
		11-41	35-60	1.20-1.50	0.06-0.20	0.15-0.18	6.0-8.9	1.0-3.0	.32	.32			
		41-80	22-60	1.20-1.60	0.06-0.20	0.15-0.18	6.0-8.9	0.0-0.5	.32	.32			
Huot-----	5	0-14	5-15	1.50-1.60	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	5	3	86
		14-26	8-15	1.55-1.65	2.00-6.00	0.09-0.17	0.0-2.9	0.0-1.0	.20	.20			
		26-34	3-8	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.20	.20			
		34-80	35-80	1.35-1.60	0.06-0.20	0.09-0.16	6.0-8.9	0.0-0.5	.32	.32			
Wildwood-----	5	0-12	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	5	2	134
		12-33	35-75	1.35-1.45	0.06-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
		33-80	50-75	1.40-1.55	0.0000-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
708:													
Rushlake-----	85	0-8	3-10	1.50-1.70	6.00-20	0.10-0.12	0.0-2.9	0.5-4.0	.17	.17	5	2	134
		8-80	1-10	1.50-1.70	6.00-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.10			
Corliss-----	6	0-8	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.15	.15	5	2	134
		8-80	0-5	1.45-1.60	6.00-20	0.03-0.05	0.0-2.9	0.0-0.5	.10	.15			
Redby-----	5	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17			
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			
Hangaard-----	3	0-12	8-18	1.25-1.45	2.00-6.00	0.10-0.14	0.0-2.9	3.0-8.0	.20	.20	5	3	86
		12-80	2-10	1.50-1.70	6.00-40	0.02-0.04	0.0-2.9	0.0-0.5	.10	.15			
Pits, gravel-----	1	---	---	---	---	---	---	---	---	---	-	---	---
712:													
Rosewood-----	85	0-11	8-18	1.20-1.40	2.00-6.00	0.13-0.18	0.0-2.9	4.0-7.0	.24	.24	3	3	86
		11-19	6-18	1.20-1.40	2.00-6.00	0.11-0.15	0.0-2.9	1.0-3.0	.24	.24			
		19-65	1-6	1.45-1.65	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
		65-80	1-6	1.40-1.65	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
Deerwood-----	6	0-14	0-0	0.10-0.30	0.60-6.00	0.35-0.45	---	50-90	---	---	5	2	134
		14-16	2-18	1.20-1.70	2.00-20	0.09-0.17	0.0-2.9	4.0-10	.17	.17			
		16-80	0-10	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-2.0	.17	.17			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
712:													
Hangaard-----	5	0-12 12-80	8-18 2-10	1.25-1.45 1.50-1.70	2.00-6.00 6.00-40	0.10-0.14 0.02-0.04	0.0-2.9 0.0-2.9	3.0-8.0 0.0-0.5	.20 .10	.20 .15	5	3	86
Ulen-----	4	0-10 10-16 16-67 67-80	8-20 5-12 1-7 10-18	1.30-1.50 1.45-1.65 1.50-1.70 1.20-1.50	2.00-6.00 6.00-20 6.00-20 0.60-2.00	0.13-0.18 0.06-0.10 0.06-0.08 0.15-0.19	0.0-2.9 0.0-2.9 0.0-2.9 0.0-2.9	2.0-5.0 0.0-1.0 0.0-0.5 0.0-0.5	.20 .17 .15 .32	.20 .17 .15 .32	3	3	86
721B:													
Corliss-----	85	0-8 8-80	2-10 0-5	1.40-1.60 1.45-1.60	6.00-20 6.00-20	0.10-0.12 0.03-0.05	0.0-2.9 0.0-2.9	1.0-3.0 0.0-0.5	.15 .10	.15 .15	5	2	134
Rushlake-----	10	0-8 8-80	3-10 1-10	1.50-1.70 1.50-1.70	6.00-20 6.00-20	0.10-0.12 0.02-0.10	0.0-2.9 0.0-2.9	0.5-4.0 0.0-0.5	.17 .05	.17 .10	5	2	134
Hangaard-----	4	0-12 12-80	8-18 2-10	1.25-1.45 1.50-1.70	2.00-6.00 6.00-40	0.10-0.14 0.02-0.04	0.0-2.9 0.0-2.9	3.0-8.0 0.0-0.5	.20 .10	.20 .15	5	3	86
Pits, gravel-----	1	---	---	---	---	---	---	---	---	---	-	---	---
733:													
Berner-----	90	0-23 23-41 41-80	--- 0-5 10-27	0.15-0.35 1.50-1.75 1.45-1.65	0.20-6.00 6.00-20 0.20-2.00	0.35-0.48 0.05-0.10 0.14-0.22	--- 0.0-2.9 3.0-5.9	80-95 0.0-0.5 0.0-0.5	--- .05 .32	--- .15 .37	2	2	134
Grygla-----	5	0-6 6-26 26-80	2-15 1-10 8-27	1.40-1.60 1.50-1.70 1.30-1.75	6.00-20 6.00-20 0.20-2.00	0.13-0.15 0.06-0.11 0.17-0.19	0.0-2.9 0.0-2.9 3.0-5.9	1.0-4.0 0.5-1.0 0.0-0.5	.15 .15 .37	.15 .15 .37	5	2	134
Seelyeville-----	5	0-12 12-80	--- ---	0.10-0.25 0.10-0.25	0.20-6.00 0.20-6.00	0.35-0.45 0.35-0.45	--- ---	25-99 25-99	--- ---	--- ---	3	2	134
737:													
Mahkonce-----	85	0-3 3-5 5-16 16-23 23-80	12-20 16-26 35-60 30-45 25-35	1.40-1.60 1.30-1.55 1.25-1.40 1.30-1.55 1.30-1.55	0.60-2.00 0.20-0.60 0.06-0.20 0.20-0.60 0.20-0.60	0.16-0.18 0.16-0.22 0.13-0.19 0.13-0.19 0.13-0.19	0.0-2.9 3.0-5.9 6.0-8.9 3.0-5.9 3.0-5.9	3.0-6.0 1.0-3.0 0.0-0.5 0.0-0.5 0.0-0.5	.28 .32 .24 .32 .32	.28 .32 .24 .32 .32	5	3	86
Auganaush-----	10	0-5 5-7 7-18 18-58 58-80	12-27 5-18 35-60 30-45 18-35	1.35-1.55 1.40-1.60 1.25-1.50 1.30-1.55 1.25-1.50	0.60-2.00 0.60-2.00 0.06-0.60 0.06-0.60 0.20-2.00	0.20-0.24 0.16-0.24 0.10-0.19 0.14-0.19 0.16-0.19	0.0-2.9 0.0-2.9 6.0-8.9 3.0-5.9 3.0-5.9	3.0-8.0 1.0-3.0 0.0-0.5 0.0-0.5 0.0-0.5	.32 .24 .28 .32 .37	.32 .24 .28 .32 .37	5	6	48

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
737: Eckvoll-----	5	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
		0-6	5-15	1.30-1.70	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		6-21	2-10	1.30-1.70	6.00-20	0.06-0.08	0.0-2.9	0.5-1.0	.15	.15			
		21-26	18-35	1.40-1.70	0.20-2.00	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
		26-80	16-32	1.30-1.70	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
755: Woodslake-----	85	0-8	41-65	1.45-1.65	0.06-0.60	0.10-0.14	6.0-8.9	3.0-5.0	.28	.28	5	4	86
		8-15	60-85	1.35-1.45	0.0000-0.06	0.09-0.13	6.0-8.9	0.5-1.0	.28	.28			
		15-36	60-85	1.35-1.45	0.02-0.06	0.09-0.13	6.0-8.9	0.0-0.5	.28	.28			
		36-80	25-50	1.30-1.45	0.02-0.06	0.09-0.22	6.0-8.9	0.0-0.5	.43	.43			
Boash-----	8	0-9	30-40	1.10-1.40	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	5	4	86
		9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32			
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			
Wildwood-----	5	0-12	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	5	2	134
		12-33	35-75	1.35-1.45	0.06-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
		33-80	50-75	1.40-1.55	0.0000-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
Dora-----	2	0-5	---	0.15-0.35	0.60-6.00	0.35-0.55	---	21-90	---	---	2	2	134
		5-31	---	0.15-0.35	0.60-6.00	0.35-0.55	---	21-90	---	---			
		31-80	35-70	1.40-1.65	0.0000-0.06	0.10-0.20	6.0-8.9	0.0-0.5	.32	.32			
767: Auganaush-----	90	0-5	12-27	1.35-1.55	0.60-2.00	0.20-0.24	0.0-2.9	3.0-8.0	.32	.32	5	6	48
		5-7	5-18	1.40-1.60	0.60-2.00	0.16-0.24	0.0-2.9	1.0-3.0	.24	.24			
		7-18	35-60	1.25-1.50	0.06-0.60	0.10-0.19	6.0-8.9	0.0-0.5	.28	.28			
		18-58	30-45	1.30-1.55	0.06-0.60	0.14-0.19	3.0-5.9	0.0-0.5	.32	.32			
		58-80	18-35	1.25-1.50	0.20-2.00	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37			
Mustinka-----	5	0-9	28-40	1.10-1.30	0.20-0.60	0.17-0.24	3.0-5.9	5.0-10	.28	.28	5	7	38
		9-35	35-60	1.20-1.40	0.06-0.20	0.13-0.19	6.0-8.9	1.0-3.0	.37	.37			
		35-62	18-35	1.20-1.40	0.20-0.60	0.14-0.19	3.0-5.9	0.5-1.0	.37	.37			
		62-80	18-35	1.40-1.60	0.20-0.60	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			
Wildwood-----	3	0-12	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	5	2	134
		12-33	35-75	1.35-1.45	0.06-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
		33-80	50-75	1.40-1.55	0.0000-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
Mahkonce-----	2	0-3	12-20	1.40-1.60	0.60-2.00	0.16-0.18	0.0-2.9	3.0-6.0	.28	.28	5	3	86
		3-5	16-26	1.30-1.55	0.20-0.60	0.16-0.22	3.0-5.9	1.0-3.0	.32	.32			
		5-16	35-60	1.25-1.40	0.06-0.20	0.13-0.19	6.0-8.9	0.0-0.5	.24	.24			
		16-23	30-45	1.30-1.55	0.20-0.60	0.13-0.19	3.0-5.9	0.0-0.5	.32	.32			
		23-80	25-35	1.30-1.55	0.20-0.60	0.13-0.19	3.0-5.9	0.0-0.5	.32	.32			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
794:													
Clearriver-----	85	0-2	5-15	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-2.0	.17	.17	5	2	134
		2-21	3-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		21-80	1-5	1.55-1.70	6.00-20	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15			
Hiwood-----	7	0-3	1-5	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.15	.15	5	1	250
		3-22	1-10	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.15	.15			
		22-80	1-10	1.55-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
Meehan-----	5	0-8	4-10	1.35-1.65	2.00-6.00	0.10-0.12	0.0-2.9	0.5-3.0	.17	.17	5	2	134
		8-31	4-9	1.60-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		31-80	1-4	1.60-1.70	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
Faunce-----	3	0-2	3-10	1.40-1.60	6.00-20	0.10-0.13	0.0-2.9	1.0-2.0	.17	.17	5	2	134
		2-14	3-10	1.45-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.10	.10			
		14-24	3-10	1.45-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.10	.15			
		24-80	0-5	1.45-1.75	6.00-20	0.03-0.06	0.0-2.9	0.0-0.5	.10	.15			
1002:													
Fluvaquents, frequently flooded---	90	0-12	1-18	1.30-1.80	2.00-20	0.07-0.13	0.0-2.9	3.0-10	.20	.20	5	3	86
		12-80	1-27	1.40-1.65	0.60-20	0.04-0.20	0.0-2.9	0.5-3.0	.17	.20			
Seelyeville-----	6	0-18	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	3	8	0
		18-80	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---			
Hapludalfs-----	2	0-6	10-18	1.30-1.45	2.00-6.00	0.16-0.18	0.0-2.9	0.5-2.0	.20	.20	5	3	86
		6-8	5-15	1.30-1.55	2.00-20	0.10-0.18	0.0-2.9	0.0-0.5	.20	.20			
		8-25	18-35	1.25-1.65	0.20-2.00	0.15-0.19	3.0-5.9	0.0-0.5	.37	.37			
		25-80	10-27	1.30-1.60	0.60-6.00	0.14-0.19	0.0-2.9	0.0-0.5	.32	.32			
Water-----	2	---	---	---	---	---	---	---	---	---	-	---	---
1030:													
Pits, gravel-----	75	---	---	---	---	---	---	---	---	---	-	---	---
Udipsamments-----	20	0-14	1-15	1.50-1.70	2.00-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15	5	2	220
		14-60	1-10	1.50-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.0	.10	.10			
		60-80	1-10	1.50-1.70	20-60	0.03-0.05	0.0-2.9	0.0-0.0	.05	.10			
Corliss-----	2	0-8	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.15	.15	5	2	134
		8-80	0-5	1.45-1.60	6.00-20	0.03-0.05	0.0-2.9	0.0-0.5	.10	.15			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1030:													
Karlstad-----	2	0-7	1-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-4.0	.17	.17	3	2	134
		7-10	5-18	1.35-1.60	2.00-6.00	0.13-0.18	0.0-2.9	0.5-2.0	.24	.24			
		10-14	5-18	1.50-1.70	2.00-6.00	0.12-0.16	0.0-2.9	0.0-0.5	.10	.17			
		14-80	1-5	1.50-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.17			
Hangaard-----	1	0-12	8-18	1.25-1.45	2.00-6.00	0.10-0.14	0.0-2.9	3.0-8.0	.20	.20	5	3	86
		12-80	2-10	1.50-1.70	6.00-40	0.02-0.04	0.0-2.9	0.0-0.5	.10	.15			
1031:													
Seelyeville, ponded---	90	0-18	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	3	8	0
		18-80	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---			
Cathro-----	4	0-8	---	0.15-0.35	0.20-6.00	0.45-0.55	---	60-85	---	---	2	2	134
		8-40	---	0.15-0.30	0.20-6.00	0.35-0.45	---	60-85	---	---			
		40-80	10-30	1.50-1.70	0.20-2.00	0.11-0.19	0.0-2.9	1.0-5.0	.20	.24			
Dora-----	3	0-5	---	0.15-0.35	0.60-6.00	0.35-0.55	---	21-90	---	---	2	2	134
		5-31	---	0.15-0.35	0.60-6.00	0.35-0.55	---	21-90	---	---			
		31-80	35-70	1.40-1.65	0.0000-0.06	0.10-0.20	6.0-8.9	0.0-0.5	.32	.32			
Markey-----	3	0-42	---	0.15-0.35	0.20-6.00	0.35-0.45	---	55-85	---	---	2	2	134
		42-80	0-10	1.40-1.65	6.00-20	0.03-0.08	0.0-2.9	0.0-0.5	.15	.15			
1067:													
Fluvaquents, frequently flooded---	60	0-11	1-18	1.30-1.80	2.00-20	0.07-0.13	0.0-2.9	3.0-10	.20	.20	5	3	86
		11-80	1-27	1.40-1.65	0.60-20	0.04-0.20	0.0-2.9	0.5-3.0	.17	.20			
Hapludalfs-----	30	0-6	10-18	1.30-1.45	2.00-6.00	0.16-0.18	0.0-2.9	0.5-2.0	.20	.20	5	3	86
		6-8	5-15	1.30-1.55	2.00-20	0.10-0.18	0.0-2.9	0.0-0.5	.20	.20			
		8-25	18-35	1.25-1.65	0.20-2.00	0.15-0.19	3.0-5.9	0.0-0.5	.37	.37			
		25-80	10-27	1.30-1.60	0.60-6.00	0.14-0.19	0.0-2.9	0.0-0.5	.32	.32			
Seelyeville-----	5	0-18	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	3	8	0
		18-80	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---			
Water-----	5	---	---	---	---	---	---	---	---	---	-	---	---
1133B:													
Skime-----	85	0-6	5-10	1.35-1.50	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		6-17	2-10	1.35-1.50	6.00-20	0.08-0.11	0.0-2.9	0.0-1.0	.15	.15			
		17-22	10-18	1.25-1.40	2.00-6.00	0.12-0.17	0.0-2.9	0.0-0.5	.24	.24			
		22-72	2-5	1.50-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
		72-80	2-18	1.50-1.70	0.60-20	0.05-0.22	0.0-2.9	0.0-0.5	.15	.15			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1133B: Hiwood-----	10	0-3	1-5	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.15	.15	5	1	250
		3-22	1-10	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.15	.15			
		22-80	1-10	1.55-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
Zippel-----	5	0-10	10-18	1.35-1.50	2.00-6.00	0.16-0.22	0.0-2.9	2.0-6.0	.28	.28	5	3	86
		10-16	5-18	1.40-1.55	2.00-6.00	0.15-0.20	0.0-2.9	0.0-1.0	.37	.37			
		16-80	5-18	1.40-1.55	2.00-6.00	0.15-0.20	0.0-2.9	0.0-0.5	.37	.37			
1134: Borup-----	55	0-9	15-27	1.20-1.40	2.00-6.00	0.20-0.23	0.0-2.9	4.0-8.0	.28	.28	5	4L	86
		9-34	10-18	1.30-1.50	2.00-6.00	0.17-0.20	0.0-2.9	1.0-3.0	.32	.32			
		34-80	5-18	1.35-1.65	2.00-20	0.15-0.19	0.0-2.9	0.0-0.5	.24	.24			
Glyndon-----	35	0-7	15-20	1.20-1.40	0.60-2.00	0.20-0.23	0.0-2.9	3.0-7.0	.28	.28	5	3	86
		7-80	10-18	1.30-1.50	0.60-6.00	0.17-0.20	0.0-2.9	1.0-2.0	.43	.43			
Augsburg, depressional	5	0-9	10-27	1.20-1.40	0.60-2.00	0.20-0.23	0.0-2.9	5.0-8.0	.28	.28	5	4L	86
		9-16	5-18	1.30-1.50	2.00-6.00	0.20-0.23	0.0-2.9	1.0-3.0	.28	.28			
		16-32	5-18	1.40-1.60	2.00-6.00	0.17-0.22	0.0-2.9	0.5-1.0	.28	.28			
		32-80	35-85	1.10-1.40	0.0000-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28			
Skime-----	5	0-6	5-10	1.35-1.50	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		6-17	2-10	1.35-1.50	6.00-20	0.08-0.11	0.0-2.9	0.0-1.0	.15	.15			
		17-22	10-18	1.25-1.40	2.00-6.00	0.12-0.17	0.0-2.9	0.0-0.5	.24	.24			
		22-72	2-5	1.50-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
		72-80	2-18	1.50-1.70	0.60-20	0.05-0.22	0.0-2.9	0.0-0.5	.15	.15			
1144: Strathcona, depressional-----	45	0-12	12-18	1.20-1.40	0.60-2.00	0.20-0.30	0.0-2.9	10-20	.20	.20	3	3	86
		12-18	10-18	1.30-1.50	2.00-6.00	0.14-0.16	0.0-2.9	0.5-2.0	.24	.24			
		18-39	2-8	1.35-1.60	6.00-20	0.05-0.09	0.0-2.9	0.0-0.5	.10	.10			
		39-80	15-30	1.40-1.60	0.20-2.00	0.14-0.18	3.0-5.9	0.0-0.5	.32	.32			
Kratka, depressional--	45	0-9	5-15	1.20-1.50	2.00-20	0.14-0.18	0.0-2.9	5.0-25	.20	.20	5	2	134
		9-26	2-10	1.30-1.60	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.17	.17			
		26-80	10-35	1.50-1.80	0.20-2.00	0.11-0.19	3.0-5.9	0.0-0.5	.32	.32			
Kratka-----	5	0-8	5-15	1.20-1.50	2.00-6.00	0.13-0.18	0.0-2.9	2.0-5.0	.20	.20	3	3	86
		8-22	2-10	1.30-1.60	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.17	.17			
		22-80	10-30	1.50-1.80	0.20-2.00	0.11-0.19	3.0-5.9	0.0-0.5	.37	.37			
Northwood-----	5	0-11	---	0.18-0.25	2.00-6.00	0.35-0.45	---	50-85	---	---	5	2	134
		11-16	3-18	1.45-1.65	2.00-20	0.09-0.17	0.0-2.9	1.0-3.0	.15	.15			
		16-25	1-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		25-80	7-30	1.40-1.75	0.60-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									Kw	Kf	T		
1154:		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
Sax-----	90	0-15	0-1	0.15-0.25	0.20-6.00	0.35-0.45	---	25-70	---	---	5	2	134
		15-24	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	1.0-15	.28	.28			
		24-39	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	0.5-1.0	.43	.43			
		39-71	10-35	1.30-1.55	0.60-2.00	0.14-0.22	0.0-2.9	0.0-0.5	.43	.43			
		71-80	27-60	1.30-1.60	0.06-0.60	0.09-0.19	6.0-8.9	0.0-0.5	.43	.43			
Wabanica-----	5	0-8	15-27	1.35-1.55	0.60-2.00	0.17-0.22	0.0-2.9	2.0-4.0	.28	.28	5	4L	86
		8-19	18-35	1.35-1.60	0.60-2.00	0.17-0.22	0.0-2.9	0.5-1.0	.28	.28			
		19-80	18-35	1.45-1.65	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.28	.28			
Cathro-----	3	0-8	---	0.15-0.35	0.20-6.00	0.45-0.55	---	60-85	---	---	2	2	134
		8-40	---	0.15-0.30	0.20-6.00	0.35-0.45	---	60-85	---	---			
		40-80	10-30	1.50-1.70	0.20-2.00	0.11-0.19	0.0-2.9	1.0-5.0	.20	.24			
Woodslake-----	2	0-8	41-65	1.45-1.65	0.06-0.60	0.10-0.14	6.0-8.9	3.0-5.0	.28	.28	5	4	86
		8-15	60-85	1.35-1.45	0.0000-0.06	0.09-0.13	6.0-8.9	0.5-1.0	.28	.28			
		15-36	60-85	1.35-1.45	0.02-0.06	0.09-0.13	6.0-8.9	0.0-0.5	.28	.28			
		36-80	25-50	1.30-1.45	0.02-0.06	0.09-0.22	6.0-8.9	0.0-0.5	.43	.43			
1158:													
Skagen-----	85	0-9	10-18	1.25-1.40	0.60-2.00	0.16-0.18	0.0-2.9	4.0-9.0	.20	.24	5	4L	86
		9-19	10-18	1.30-1.50	0.60-6.00	0.11-0.18	0.0-2.9	0.5-2.0	.24	.28			
		19-80	10-18	1.30-1.50	0.60-6.00	0.11-0.18	0.0-2.9	0.0-0.5	.24	.28			
Percy-----	10	0-10	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		10-25	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
Foxhome-----	5	0-10	10-20	1.35-1.50	2.00-6.00	0.13-0.18	0.0-2.9	3.0-7.0	.20	.20	3	3	86
		10-15	2-10	1.45-1.60	6.00-20	0.07-0.12	0.0-2.9	0.5-1.0	.20	.20			
		15-23	1-5	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-1.0	.05	.15			
		23-80	12-35	1.40-1.70	0.60-2.00	0.15-0.22	0.0-2.9	0.0-0.5	.32	.37			
1170:													
Skagen, very cobbly---	85	0-10	10-18	1.25-1.40	0.60-2.00	0.16-0.18	0.0-2.9	4.0-9.0	.20	.24	5	4L	86
		10-28	10-18	1.30-1.50	0.60-6.00	0.11-0.18	0.0-2.9	0.5-2.0	.24	.28			
		28-80	10-18	1.30-1.50	0.60-6.00	0.11-0.18	0.0-2.9	0.0-0.5	.24	.28			
Percy, very cobbly----	10	0-8	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		8-23	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		23-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1170:													
Foxhome-----	5	0-10	10-20	1.35-1.50	2.00-6.00	0.13-0.18	0.0-2.9	3.0-7.0	.20	.20	3	3	86
		10-15	2-10	1.45-1.60	6.00-20	0.07-0.12	0.0-2.9	0.5-1.0	.20	.20			
		15-23	1-5	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-1.0	.05	.15			
		23-80	12-35	1.40-1.70	0.60-2.00	0.15-0.22	0.0-2.9	0.0-0.5	.32	.37			
1179B:													
Moranville-----	85	0-8	2-10	1.45-1.60	6.00-20	0.08-0.11	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		8-24	2-5	1.45-1.60	6.00-20	0.05-0.11	0.0-2.9	0.0-0.5	.15	.15			
		24-42	27-35	1.15-1.30	0.20-0.60	0.14-0.20	3.0-5.9	0.0-0.5	.43	.43			
		42-80	15-35	1.15-1.30	0.20-2.00	0.13-0.20	3.0-5.9	0.0-0.5	.43	.43			
Baudette-----	5	0-8	5-18	1.30-1.45	2.00-6.00	0.15-0.19	0.0-2.9	1.0-4.0	.28	.28	5	3	86
		8-10	5-27	1.30-1.50	0.60-2.00	0.14-0.20	0.0-2.9	0.5-1.0	.37	.37			
		10-30	18-35	1.25-1.45	0.60-2.00	0.17-0.24	3.0-5.9	0.5-1.0	.37	.37			
		30-80	5-27	1.30-1.60	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.37	.37			
Hiwood-----	5	0-3	1-5	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.15	.15	5	1	250
		3-22	1-10	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.15	.15			
		22-80	1-10	1.55-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
Spooner-----	5	0-6	5-18	1.30-1.45	2.00-6.00	0.20-0.22	0.0-2.9	2.0-4.0	.37	.37	5	3	86
		6-15	3-18	1.35-1.55	0.60-6.00	0.17-0.19	0.0-2.9	0.5-1.0	.37	.37			
		15-22	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.37	.37			
		22-60	5-32	1.40-1.60	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.37	.37			
1181:													
Rosewood-----	50	0-8	8-18	1.20-1.40	2.00-6.00	0.13-0.18	0.0-2.9	4.0-7.0	.24	.24	3	3	86
		8-15	6-18	1.20-1.40	2.00-6.00	0.11-0.15	0.0-2.9	1.0-3.0	.24	.24			
		15-80	1-6	1.45-1.65	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
Ulen-----	40	0-10	8-20	1.30-1.50	2.00-6.00	0.13-0.18	0.0-2.9	2.0-5.0	.20	.20	3	3	86
		10-18	5-12	1.45-1.65	6.00-20	0.06-0.10	0.0-2.9	0.0-1.0	.17	.17			
		18-80	1-7	1.50-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.15	.15			
Redby-----	5	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17			
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			
Deerwood-----	3	0-14	0-0	0.10-0.30	0.60-6.00	0.35-0.45	---	50-90	---	---	5	2	134
		14-16	2-18	1.20-1.70	2.00-20	0.09-0.17	0.0-2.9	4.0-10	.17	.17			
		16-80	0-10	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-2.0	.17	.17			
Syrene-----	2	0-11	8-18	1.25-1.45	2.00-6.00	0.13-0.18	0.0-2.9	3.0-8.0	.20	.20	3	3	86
		11-19	10-30	1.30-1.50	2.00-6.00	0.15-0.19	0.0-2.9	0.0-2.0	.37	.37			
		19-80	2-10	1.50-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.10			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									Kw	Kf	T		
1182:		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
Warroad-----	85	0-11	5-15	1.25-1.35	2.00-6.00	0.13-0.18	0.0-2.9	2.0-5.0	.24	.24	3	3	86
		11-26	2-10	1.45-1.60	6.00-20	0.05-0.11	0.0-2.9	0.5-1.0	.17	.17			
		26-80	18-35	1.15-1.30	0.20-2.00	0.19-0.21	3.0-5.9	0.0-0.5	.43	.43			
Wabanica-----	7	0-8	15-27	1.35-1.55	0.60-2.00	0.17-0.22	0.0-2.9	2.0-4.0	.28	.28	5	4L	86
		8-19	18-35	1.35-1.60	0.60-2.00	0.17-0.22	0.0-2.9	0.5-1.0	.28	.28			
		19-80	18-35	1.45-1.65	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.28	.28			
Enstrom-----	5	0-6	4-15	1.30-1.50	6.00-20	0.10-0.12	0.0-2.9	0.5-4.0	.17	.17	5	2	134
		6-29	1-12	1.40-1.65	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.15	.15			
		29-80	10-35	1.50-1.65	0.20-2.00	0.17-0.20	3.0-5.9	0.0-0.5	.37	.37			
Sax-----	3	0-15	0-1	0.15-0.25	0.20-6.00	0.35-0.45	---	25-70	---	---	5	2	134
		15-24	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	1.0-15	.28	.28			
		24-39	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	0.5-1.0	.43	.43			
		39-71	10-35	1.30-1.55	0.60-2.00	0.14-0.22	0.0-2.9	0.0-0.5	.43	.43			
		71-80	27-60	1.30-1.60	0.06-0.60	0.09-0.19	6.0-8.9	0.0-0.5	.43	.43			
1187:													
Dora, ponded-----	90	0-24	---	0.15-0.45	0.60-6.00	0.35-0.55	---	25-99	---	---	2	8	0
		24-30	22-40	1.10-1.25	0.60-2.00	0.22-0.25	3.0-5.9	10-20	.28	.28			
		30-80	35-60	1.40-1.65	0.0000-0.06	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
Seelyeville, ponded---	4	0-18	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	3	8	0
		18-80	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---			
Wildwood-----	4	0-12	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	5	2	134
		12-33	35-75	1.35-1.45	0.06-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
		33-80	50-75	1.40-1.55	0.0000-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
Boash-----	2	0-9	30-40	1.10-1.40	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.32	.32	5	4	86
		9-29	35-60	1.10-1.40	0.06-0.20	0.15-0.20	6.0-8.9	1.0-3.0	.32	.32			
		29-80	16-35	1.20-1.60	0.60-2.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			
1191:													
Sahkahtay-----	85	0-4	5-15	1.35-1.50	2.00-6.00	0.10-0.14	0.0-2.9	2.0-4.0	.20	.20	5	3	86
		4-8	2-10	1.45-1.55	6.00-20	0.05-0.08	0.0-2.9	0.5-1.0	.15	.15			
		8-14	18-30	1.40-1.55	0.60-2.00	0.13-0.17	3.0-5.9	0.5-1.0	.28	.28			
		14-80	1-8	1.50-1.70	20-40	0.03-0.06	0.0-2.9	0.0-0.5	.10	.15			
Cormant-----	5	0-6	3-10	1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1191:													
Deerwood-----	5	0-14	0-0	0.10-0.30	0.60-6.00	0.35-0.45	---	50-90	---	---	5	2	134
		14-16	2-18	1.20-1.70	2.00-20	0.09-0.17	0.0-2.9	4.0-10	.17	.17			
		16-80	0-10	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-2.0	.17	.17			
Karlstad-----	3	0-7	1-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-4.0	.17	.17	3	2	134
		7-10	5-18	1.35-1.60	2.00-6.00	0.13-0.18	0.0-2.9	0.5-2.0	.24	.24			
		10-14	5-18	1.50-1.70	2.00-6.00	0.12-0.16	0.0-2.9	0.0-0.5	.10	.17			
		14-80	1-5	1.50-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.17			
Redby-----	2	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17			
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			
1206:													
Cormant-----	55	0-7	3-10	1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
		7-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
Redby-----	35	0-4	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		4-30	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17			
		30-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			
Hiwood-----	5	0-3	1-5	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.15	.15	5	1	250
		3-22	1-10	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.15	.15			
		22-80	1-10	1.55-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
Leafriver-----	5	0-13	---	0.10-0.25	0.60-6.00	0.35-0.50	---	50-90	---	---	5	2	134
		13-80	0-10	1.50-1.65	6.00-20	0.03-0.08	0.0-2.9	0.5-5.0	.17	.17			
1214:													
Mustinka-----	90	0-9	28-40	1.10-1.30	0.20-0.60	0.17-0.24	3.0-5.9	5.0-10	.28	.28	5	7	38
		9-35	35-60	1.20-1.40	0.06-0.20	0.13-0.19	6.0-8.9	1.0-3.0	.37	.37			
		35-62	18-35	1.20-1.40	0.20-0.60	0.14-0.19	3.0-5.9	0.5-1.0	.37	.37			
		62-80	18-35	1.40-1.60	0.20-0.60	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			
Espelie-----	4	0-10	8-18	1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	5	3	86
		10-27	3-10	1.35-1.60	2.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.17	.17			
		27-80	35-60	1.35-1.60	0.06-0.20	0.09-0.19	6.0-8.9	0.0-0.5	.32	.32			
Wildwood-----	4	0-12	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	5	2	134
		12-33	35-75	1.35-1.45	0.06-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
		33-80	50-75	1.40-1.55	0.0000-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
Dalbo-----	2	0-15	20-27	1.25-1.45	0.60-2.00	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
		15-23	35-60	1.25-1.45	0.06-0.60	0.10-0.18	6.0-8.9	0.5-2.0	.32	.32			
		23-80	35-60	1.30-1.60	0.20-2.00	0.10-0.18	3.0-5.9	0.0-0.5	.32	.32			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1274B:													
Redby-----	40	0-10	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		10-35	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17			
		35-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			
Hiwood-----	30	0-7	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		7-32	1-10	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.15	.15			
		32-80	1-10	1.55-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
Leafriver, wooded----	15	0-10	---	0.10-0.25	0.60-6.00	0.35-0.50	---	50-90	---	---	5	2	134
		10-13	3-18	1.40-1.65	2.00-20	0.08-0.14	0.0-2.9	5.0-20	.17	.17			
		13-80	0-10	1.50-1.65	6.00-20	0.03-0.08	0.0-2.9	0.5-5.0	.17	.17			
Clearriver-----	5	0-2	5-15	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-2.0	.17	.17	5	2	134
		2-21	3-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		21-80	1-5	1.55-1.70	6.00-20	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15			
Cormant-----	5	0-6	3-10	1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
Zimmerman-----	5	0-6	2-5	1.45-1.65	6.00-20	0.07-0.09	0.0-2.9	0.5-1.0	.17	.17	5	1	220
		6-80	2-10	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.17	.17			
1298:													
Borup-----	90	0-8	15-27	1.20-1.40	2.00-6.00	0.20-0.23	0.0-2.9	4.0-8.0	.28	.28	5	4L	86
		8-80	10-18	1.30-1.50	2.00-6.00	0.17-0.20	0.0-2.9	1.0-3.0	.32	.32			
Augsburg, depressional	3	0-9	10-27	1.20-1.40	0.60-2.00	0.20-0.23	0.0-2.9	5.0-8.0	.28	.28	5	4L	86
		9-16	5-18	1.30-1.50	2.00-6.00	0.20-0.23	0.0-2.9	1.0-3.0	.28	.28			
		16-32	5-18	1.40-1.60	2.00-6.00	0.17-0.22	0.0-2.9	0.5-1.0	.28	.28			
		32-80	35-85	1.10-1.40	0.0000-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28			
Glyndon-----	3	0-7	15-20	1.20-1.40	0.60-2.00	0.20-0.23	0.0-2.9	3.0-7.0	.28	.28	5	3	86
		7-80	10-18	1.30-1.50	0.60-6.00	0.17-0.20	0.0-2.9	1.0-2.0	.43	.43			
Sago-----	2	0-14	---	0.15-0.25	0.60-6.00	0.35-0.45	0.0-2.9	50-95	---	---	5	2	134
		14-80	6-18	1.50-1.70	0.60-2.00	0.14-0.20	0.0-2.9	0.0-2.0	.28	.28			
Skime-----	2	0-6	5-10	1.35-1.50	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		6-17	2-10	1.35-1.50	6.00-20	0.08-0.11	0.0-2.9	0.0-1.0	.15	.15			
		17-22	10-18	1.25-1.40	2.00-6.00	0.12-0.17	0.0-2.9	0.0-0.5	.24	.24			
		22-72	2-5	1.50-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
		72-80	2-18	1.50-1.70	0.60-20	0.05-0.22	0.0-2.9	0.0-0.5	.15	.15			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1302:													
Foldahl-----	85	0-12	4-15	1.30-1.50	2.00-6.00	0.14-0.18	0.0-2.9	2.0-5.0	.20	.20	5	3	86
		12-30	2-10	1.45-1.60	6.00-20	0.07-0.12	0.0-2.9	0.5-1.0	.20	.20			
		30-80	18-35	1.50-1.65	0.20-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			
Kratka-----	10	0-8	5-15	1.20-1.50	2.00-6.00	0.13-0.18	0.0-2.9	2.0-5.0	.20	.20	3	3	86
		8-22	2-10	1.30-1.60	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.17	.17			
		22-80	10-30	1.50-1.80	0.20-2.00	0.11-0.19	3.0-5.9	0.0-0.5	.37	.37			
Foxhome-----	5	0-10	10-20	1.35-1.50	2.00-6.00	0.13-0.18	0.0-2.9	3.0-7.0	.20	.20	3	3	86
		10-15	2-10	1.45-1.60	6.00-20	0.07-0.12	0.0-2.9	0.5-1.0	.20	.20			
		15-23	1-5	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.5-1.0	.05	.15			
		23-80	12-35	1.40-1.70	0.60-2.00	0.15-0.22	0.0-2.9	0.0-0.5	.32	.37			
1304:													
Glyndon-----	85	0-11	15-20	1.20-1.40	0.60-2.00	0.20-0.23	0.0-2.9	3.0-7.0	.28	.28	5	3	86
		11-56	10-18	1.30-1.50	0.60-6.00	0.17-0.20	0.0-2.9	1.0-2.0	.43	.43			
		56-80	5-18	1.35-1.65	2.00-6.00	0.15-0.19	0.0-2.9	0.0-0.5	.43	.43			
Borup-----	10	0-8	15-27	1.20-1.40	2.00-6.00	0.20-0.23	0.0-2.9	4.0-8.0	.28	.28	5	4L	86
		8-80	10-18	1.30-1.50	2.00-6.00	0.17-0.20	0.0-2.9	1.0-3.0	.32	.32			
Skime-----	5	0-6	5-10	1.35-1.50	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		6-17	2-10	1.35-1.50	6.00-20	0.08-0.11	0.0-2.9	0.0-1.0	.15	.15			
		17-22	10-18	1.25-1.40	2.00-6.00	0.12-0.17	0.0-2.9	0.0-0.5	.24	.24			
		22-72	2-5	1.50-1.70	6.00-20	0.05-0.08	0.0-2.9	0.0-0.5	.15	.15			
		72-80	2-18	1.50-1.70	0.60-20	0.05-0.22	0.0-2.9	0.0-0.5	.15	.15			
1305:													
Hilaire-----	85	0-13	8-18	1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.15	.20	3	3	86
		13-33	3-10	1.25-1.40	6.00-20	0.07-0.14	0.0-2.9	1.0-2.0	.15	.15			
		33-80	35-60	1.35-1.55	0.06-0.20	0.09-0.19	6.0-9.0	0.0-0.5	.32	.32			
Espelie-----	11	0-10	8-18	1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	5	3	86
		10-27	3-10	1.35-1.60	2.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.17	.17			
		27-80	35-60	1.35-1.60	0.06-0.20	0.09-0.19	6.0-8.9	0.0-0.5	.32	.32			
Grano-----	2	0-11	10-27	1.30-1.60	0.60-6.00	0.10-0.16	0.0-2.9	2.0-5.0	.24	.24	5	5	56
		11-41	35-60	1.20-1.50	0.06-0.20	0.15-0.18	6.0-8.9	1.0-3.0	.32	.32			
		41-80	22-60	1.20-1.60	0.06-0.20	0.15-0.18	6.0-8.9	0.0-0.5	.32	.32			
Redby-----	2	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17			
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1314:													
Tacoosh-----	90	0-17	0-0	0.10-0.20	0.60-6.00	0.45-0.55	---	75-99	---	---	2	5	56
		17-33	0-0	0.10-0.20	0.60-6.00	0.45-0.55	---	75-99	---	---			
		33-80	15-35	1.40-1.65	0.20-2.00	0.16-0.22	3.0-5.9	0.0-0.5	.43	.43			
Rifle-----	8	0-8	---	0.10-0.25	0.60-6.00	0.48-0.58	---	75-99	---	---	3	5	56
		8-80	---	0.08-0.20	0.60-6.00	0.48-0.58	---	25-99	---	---			
Sax-----	2	0-15	0-1	0.15-0.25	0.20-6.00	0.35-0.45	---	25-70	---	---	5	2	134
		15-24	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	1.0-15	.28	.28			
		24-39	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	0.5-1.0	.43	.43			
		39-71	10-35	1.30-1.55	0.60-2.00	0.14-0.22	0.0-2.9	0.0-0.5	.43	.43			
		71-80	27-60	1.30-1.60	0.06-0.60	0.09-0.19	6.0-8.9	0.0-0.5	.43	.43			
1316:													
Wheatville-----	85	0-12	15-27	1.25-1.40	2.00-6.00	0.18-0.22	0.0-2.9	3.0-7.0	.28	.28	5	4L	86
		12-35	5-18	1.35-1.55	2.00-6.00	0.15-0.21	0.0-2.9	0.5-1.0	.28	.28			
		35-80	35-80	1.15-1.50	0.06-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28			
Augsburg-----	13	0-9	10-27	1.20-1.40	0.60-2.00	0.20-0.23	0.0-2.9	4.0-6.0	.28	.28	5	4L	86
		9-33	5-18	1.30-1.50	2.00-6.00	0.20-0.23	0.0-2.9	1.0-3.0	.28	.28			
		33-80	35-85	1.10-1.40	0.0000-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28			
Grano-----	2	0-11	10-27	1.30-1.60	0.60-6.00	0.10-0.16	0.0-2.9	2.0-5.0	.24	.24	5	5	56
		11-41	35-60	1.20-1.50	0.06-0.20	0.15-0.18	6.0-8.9	1.0-3.0	.32	.32			
		41-80	22-60	1.20-1.60	0.06-0.20	0.15-0.18	6.0-8.9	0.0-0.5	.32	.32			
1326:													
Augsburg, depressional	45	0-9	10-27	1.20-1.40	0.60-2.00	0.20-0.23	0.0-2.9	5.0-8.0	.28	.28	5	4L	86
		9-16	5-18	1.30-1.50	2.00-6.00	0.20-0.23	0.0-2.9	1.0-3.0	.28	.28			
		16-32	5-18	1.40-1.60	2.00-6.00	0.17-0.22	0.0-2.9	0.5-1.0	.28	.28			
		32-80	35-85	1.10-1.40	0.0000-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28			
Wabanica, depressional	45	0-8	18-27	1.15-1.25	0.60-2.00	0.22-0.24	3.0-5.9	8.0-12	.28	.28	5	4L	86
		8-26	18-35	1.15-1.30	0.20-2.00	0.16-0.22	3.0-5.9	2.0-5.0	.43	.43			
		26-68	18-35	1.15-1.30	0.20-2.00	0.16-0.22	3.0-5.9	0.0-1.0	.43	.43			
		68-80	35-60	1.15-1.40	0.06-0.20	0.09-0.13	6.0-8.9	0.0-1.0	.32	.32			
Sax-----	6	0-15	0-1	0.15-0.25	0.20-6.00	0.35-0.45	---	25-70	---	---	5	2	134
		15-24	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	1.0-15	.28	.28			
		24-39	18-35	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	0.5-1.0	.43	.43			
		39-71	10-35	1.30-1.55	0.60-2.00	0.14-0.22	0.0-2.9	0.0-0.5	.43	.43			
		71-80	27-60	1.30-1.60	0.06-0.60	0.09-0.19	6.0-8.9	0.0-0.5	.43	.43			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1326:													
Espelle-----	2	0-10	8-18	1.30-1.45	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	5	3	86
		10-27	3-10	1.35-1.60	2.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.17	.17			
		27-80	35-60	1.35-1.60	0.06-0.20	0.09-0.19	6.0-8.9	0.0-0.5	.32	.32			
Zippel-----	2	0-10	10-18	1.35-1.50	2.00-6.00	0.16-0.22	0.0-2.9	2.0-6.0	.28	.28	5	3	86
		10-16	5-18	1.40-1.55	2.00-6.00	0.15-0.20	0.0-2.9	0.0-1.0	.37	.37			
		16-80	5-18	1.40-1.55	2.00-6.00	0.15-0.20	0.0-2.9	0.0-0.5	.37	.37			
1327B:													
Karlstad-----	65	0-11	1-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-4.0	.17	.17	3	2	134
		11-14	5-18	1.35-1.60	2.00-6.00	0.13-0.18	0.0-2.9	0.5-2.0	.24	.24			
		14-16	5-18	1.50-1.70	2.00-6.00	0.12-0.16	0.0-2.9	0.0-0.5	.10	.17			
		16-80	1-5	1.50-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.17			
Marquette-----	25	0-10	1-10	1.40-1.60	6.00-20	0.10-0.14	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		10-18	5-18	1.50-1.70	2.00-6.00	0.10-0.16	0.0-2.9	0.5-1.0	.15	.20			
		18-80	1-5	1.50-1.70	20-60	0.02-0.04	0.0-2.9	0.0-0.5	.05	.15			
Sahkahtay-----	7	0-4	5-15	1.35-1.50	2.00-6.00	0.10-0.14	0.0-2.9	2.0-4.0	.20	.20	5	3	86
		4-8	2-10	1.45-1.55	6.00-20	0.05-0.08	0.0-2.9	0.5-1.0	.15	.15			
		8-14	18-30	1.40-1.55	0.60-2.00	0.13-0.17	3.0-5.9	0.5-1.0	.28	.28			
		14-80	1-8	1.50-1.70	20-40	0.03-0.06	0.0-2.9	0.0-0.5	.10	.15			
Redby-----	3	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17			
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			
1328:													
Northwood, wooded-----	90	0-15	---	0.18-0.25	2.00-6.00	0.35-0.45	---	50-85	---	---	5	2	134
		15-21	3-18	1.45-1.65	2.00-20	0.09-0.17	0.0-2.9	1.0-3.0	.15	.15			
		21-39	1-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		39-80	7-30	1.40-1.75	0.60-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			
Berner, wooded-----	5	0-20	---	0.15-0.35	0.20-6.00	0.35-0.48	---	80-95	---	---	2	2	134
		20-44	0-5	1.50-1.75	6.00-20	0.05-0.10	0.0-2.9	0.0-0.5	.05	.15			
		44-80	10-27	1.45-1.65	0.20-2.00	0.14-0.22	3.0-5.9	0.0-0.5	.32	.37			
Grygla-----	5	0-6	2-15	1.40-1.60	6.00-20	0.13-0.15	0.0-2.9	1.0-4.0	.15	.15	5	2	134
		6-26	1-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.15	.15			
		26-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
1333:													
Dora, wooded-----	90	0-8	---	0.15-0.35	0.60-6.00	0.35-0.55	---	21-90	---	---	2	2	134
		8-26	---	0.15-0.35	0.60-6.00	0.35-0.55	---	21-90	---	---			
		26-80	35-70	1.40-1.65	0.0000-0.06	0.10-0.20	6.0-8.9	0.0-0.5	.32	.32			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1333:													
Lupton-----	4	0-16	0-0	0.10-0.35	0.20-6.00	0.35-0.45	---	70-90	---	---	3	2	134
		16-80	0-0	0.10-0.35	0.20-6.00	0.35-0.45	---	---	---	---			
Wildwood-----	4	0-12	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	5	2	134
		12-33	35-75	1.35-1.45	0.06-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
		33-80	50-75	1.40-1.55	0.0000-0.20	0.00-0.04	6.0-8.9	0.0-0.5	.28	.28			
Auganaush-----	2	0-5	12-27	1.35-1.55	0.60-2.00	0.20-0.24	0.0-2.9	3.0-8.0	.32	.32	5	6	48
		5-7	5-18	1.40-1.60	0.60-2.00	0.16-0.24	0.0-2.9	1.0-3.0	.24	.24			
		7-18	35-60	1.25-1.50	0.06-0.60	0.10-0.19	6.0-8.9	0.0-0.5	.28	.28			
		18-58	30-45	1.30-1.55	0.06-0.60	0.14-0.19	3.0-5.9	0.0-0.5	.32	.32			
		58-80	18-35	1.25-1.50	0.20-2.00	0.16-0.19	3.0-5.9	0.0-0.5	.37	.37			
1356:													
Water, miscellaneous.													
1399B:													
Two Inlets-----	85	0-2	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	0.5-1.0	.10	.15	5	2	134
		2-4	2-10	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.10	.15			
		4-17	5-15	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.10	.15			
		17-80	0-3	1.60-1.80	20-40	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
Wurtsmith-----	6	0-5	3-8	1.50-1.65	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		5-45	2-7	1.35-1.65	6.00-20	0.05-0.11	0.0-2.9	0.0-0.5	.15	.15			
		45-80	0-4	1.50-1.70	6.00-20	0.04-0.07	0.0-2.9	0.0-0.5	.15	.15			
Zimmerman-----	6	0-6	2-5	1.45-1.65	6.00-20	0.07-0.09	0.0-2.9	0.5-1.0	.17	.17	5	1	220
		6-80	2-10	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.17	.17			
Meehan-----	3	0-8	4-10	1.35-1.65	2.00-6.00	0.10-0.12	0.0-2.9	0.5-3.0	.17	.17	5	2	134
		8-31	4-9	1.60-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		31-80	1-4	1.60-1.70	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
1401:													
Grygla, depressional--	90	0-5	2-15	1.40-1.60	6.00-20	0.10-0.15	0.0-2.9	1.0-10	.15	.15	5	2	134
		5-36	1-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-1.0	.15	.15			
		36-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
Northwood, wooded----	5	0-15	---	0.18-0.25	2.00-6.00	0.35-0.45	---	50-85	---	---	5	2	134
		15-21	3-18	1.45-1.65	2.00-20	0.09-0.17	0.0-2.9	1.0-3.0	.15	.15			
		21-39	1-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		39-80	7-30	1.40-1.75	0.60-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1401:													
Chilgren-----	3	0-5	5-18	1.30-1.60	2.00-6.00	0.16-0.18	0.0-2.9	1.0-3.0	.28	.28	5	3	86
		5-9	2-18	1.40-1.60	0.60-2.00	0.13-0.22	0.0-2.9	0.5-1.0	.28	.28			
		9-16	18-35	1.30-1.70	0.60-2.00	0.18-0.22	3.0-5.9	0.0-0.5	.28	.28			
		16-80	10-27	1.30-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.28	.28			
Grygla-----	2	0-6	2-15	1.40-1.60	6.00-20	0.13-0.15	0.0-2.9	1.0-4.0	.15	.15	5	2	134
		6-26	1-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.15	.15			
		26-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
1402:													
Leafriver, wooded-----	90	0-10	---	0.10-0.25	0.60-6.00	0.35-0.50	---	50-90	---	---	5	2	134
		10-13	3-18	1.40-1.65	2.00-20	0.08-0.14	0.0-2.9	5.0-20	.17	.17			
		13-80	0-10	1.50-1.65	6.00-20	0.03-0.08	0.0-2.9	0.5-5.0	.17	.17			
Cormant-----	4	0-6	3-10	1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
Tawas-----	4	0-10	---	0.15-0.35	0.20-6.00	0.35-0.45	---	40-60	---	---	2	2	134
		10-27	---	0.15-0.35	0.20-6.00	0.35-0.45	---	40-60	---	---			
		27-80	0-10	1.40-1.65	6.00-20	0.03-0.10	0.0-2.9	---	.15	.15			
Redby-----	2	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17			
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			
1404:													
Berner, wooded-----	90	0-20	---	0.15-0.35	0.20-6.00	0.35-0.48	---	80-95	---	---	2	2	134
		20-44	0-5	1.50-1.75	6.00-20	0.05-0.10	0.0-2.9	0.0-0.5	.05	.15			
		44-80	10-27	1.45-1.65	0.20-2.00	0.14-0.22	3.0-5.9	0.0-0.5	.32	.37			
Lupton-----	4	0-16	0-0	0.10-0.35	0.20-6.00	0.35-0.45	---	70-90	---	---	3	2	134
		16-80	0-0	0.10-0.35	0.20-6.00	0.35-0.45	---	---	---	---			
Northwood, wooded-----	4	0-15	---	0.18-0.25	2.00-6.00	0.35-0.45	---	50-85	---	---	5	2	134
		15-21	3-18	1.45-1.65	2.00-20	0.09-0.17	0.0-2.9	1.0-3.0	.15	.15			
		21-39	1-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		39-80	7-30	1.40-1.75	0.60-2.00	0.14-0.19	3.0-5.9	0.0-0.5	.37	.37			
Grygla-----	2	0-6	2-15	1.40-1.60	6.00-20	0.13-0.15	0.0-2.9	1.0-4.0	.15	.15	5	2	134
		6-26	1-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.15	.15			
		26-80	8-27	1.30-1.75	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1405: Lallie-----	90	0-8 8-80	18-27 27-60	1.20-1.30 1.25-1.35	0.06-0.20 0.06-0.20	0.12-0.15 0.10-0.15	3.0-5.9 6.0-8.9	8.0-16 2.0-8.0	.37 .37	.37 .37	5	8	0
Sax-----	7	0-15 15-24 24-39 39-71 71-80	0-1 18-35 18-35 10-35 27-60	0.15-0.25 1.30-1.50 1.30-1.50 1.30-1.55 1.30-1.60	0.20-6.00 0.60-2.00 0.60-2.00 0.60-2.00 0.06-0.60	0.35-0.45 0.17-0.22 0.17-0.22 0.14-0.22 0.09-0.19	--- 0.0-2.9 0.0-2.9 0.0-2.9 6.0-8.9	25-70 1.0-15 0.5-1.0 0.0-0.5 0.0-0.5	--- .28 .43 .43 .43	--- .28 .43 .43 .43	5	2	134
Wabanica-----	3	0-8 8-19 19-80	15-27 18-35 18-35	1.35-1.55 1.35-1.60 1.45-1.65	0.60-2.00 0.60-2.00 0.60-2.00	0.17-0.22 0.17-0.22 0.17-0.22	0.0-2.9 0.0-2.9 0.0-2.9	2.0-4.0 0.5-1.0 0.0-0.5	.28 .28 .28	.28 .28 .28	5	4L	86
1414: Nereson, very cobbly--	85	0-7 7-11 11-29 29-80	7-12 10-18 12-18 12-18	1.35-1.45 1.35-1.45 1.50-1.65 1.50-1.65	2.00-6.00 0.60-2.00 0.60-6.00 0.60-6.00	0.14-0.17 0.18-0.22 0.16-0.18 0.16-0.18	0.0-2.9 0.0-2.9 0.0-2.9 0.0-2.9	4.0-6.0 0.5-1.0 0.0-0.5 0.0-0.5	.17 .24 .24 .24	.20 .28 .28 .28	5	3	86
Percy, very cobbly----	10	0-8 8-23 23-80	10-30 10-18 7-18	1.30-1.60 1.30-1.60 1.60-1.80	0.60-2.00 0.60-2.00 0.60-2.00	0.18-0.22 0.15-0.19 0.12-0.19	3.0-5.9 0.0-2.9 0.0-2.9	4.0-9.0 0.5-1.0 0.0-0.5	.24 .24 .24	.28 .28 .28	5	5	56
Pelan-----	3	0-6 6-12 12-24 24-60	5-20 15-25 1-8 8-18	1.35-1.55 1.50-1.65 1.55-1.70 1.40-1.75	2.00-6.00 6.00-20 6.00-20 0.60-2.00	0.10-0.13 0.05-0.11 0.02-0.09 0.14-0.18	0.0-2.9 0.0-2.9 0.0-2.9 0.0-2.9	0.5-3.0 0.5-1.0 0.0-0.5 0.0-0.5	.24 .20 .20 .28	.24 .24 .20 .28	5	3	86
Foxhome-----	2	0-10 10-15 15-23 23-80	10-20 2-10 1-5 12-35	1.35-1.50 1.45-1.60 1.50-1.70 1.40-1.70	2.00-6.00 6.00-20 6.00-20 0.60-2.00	0.13-0.18 0.07-0.12 0.02-0.07 0.15-0.22	0.0-2.9 0.0-2.9 0.0-2.9 0.0-2.9	3.0-7.0 0.5-1.0 0.5-1.0 0.0-0.5	.20 .20 .05 .32	.20 .20 .15 .37	3	3	86
1428: Karlsruhe-----	85	0-8 8-16 16-80	5-15 5-15 0-5	1.10-1.40 1.20-1.50 1.30-1.60	2.00-6.00 2.00-20 6.00-40	0.10-0.15 0.09-0.14 0.02-0.07	0.0-2.9 0.0-2.9 0.0-2.9	4.0-7.0 1.0-3.0 0.0-0.5	.20 .20 .10	.20 .20 .15	5	3	86
Syrene-----	10	0-11 11-19 19-80	8-18 10-30 2-10	1.25-1.45 1.30-1.50 1.50-1.70	2.00-6.00 2.00-6.00 6.00-20	0.13-0.18 0.15-0.19 0.02-0.04	0.0-2.9 0.0-2.9 0.0-2.9	3.0-8.0 0.0-2.0 0.0-0.5	.20 .37 .10	.20 .37 .10	3	3	86
Ulen-----	5	0-10 10-16 16-67 67-80	8-20 5-12 1-7 10-18	1.30-1.50 1.45-1.65 1.50-1.70 1.20-1.50	2.00-6.00 6.00-20 6.00-20 0.60-2.00	0.13-0.18 0.06-0.10 0.06-0.08 0.15-0.19	0.0-2.9 0.0-2.9 0.0-2.9 0.0-2.9	2.0-5.0 0.0-1.0 0.0-0.5 0.0-0.5	.20 .17 .15 .32	.20 .17 .15 .32	3	3	86

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1444:													
Wurtsmith-----	85	0-5	3-8	1.50-1.65	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		5-45	2-7	1.35-1.65	6.00-20	0.05-0.11	0.0-2.9	0.0-0.5	.15	.15			
		45-80	0-4	1.50-1.70	6.00-20	0.04-0.07	0.0-2.9	0.0-0.5	.15	.15			
Meehan-----	10	0-8	4-10	1.35-1.65	2.00-6.00	0.10-0.12	0.0-2.9	0.5-3.0	.17	.17	5	2	134
		8-31	4-9	1.60-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		31-80	1-4	1.60-1.70	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
Clearriver-----	2	0-2	5-15	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-2.0	.17	.17	5	2	134
		2-21	3-10	1.55-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		21-80	1-5	1.55-1.70	6.00-20	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15			
Two Inlets-----	2	0-2	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	0.5-1.0	.10	.15	5	2	134
		2-4	2-10	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.10	.15			
		4-17	5-15	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.10	.15			
		17-80	0-3	1.60-1.80	20-40	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
Cormant-----	1	0-6	3-10	1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
1448:													
Grano-----	90	0-13	40-60	1.20-1.50	0.06-0.20	0.13-0.17	6.0-8.9	3.0-6.0	.28	.28	5	4	86
		13-54	35-60	1.20-1.50	0.06-0.20	0.15-0.18	6.0-8.9	1.0-3.0	.32	.32			
		54-80	22-60	1.20-1.60	0.06-0.20	0.15-0.18	6.0-8.9	0.0-0.5	.32	.32			
Percy-----	5	0-10	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		10-25	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
Augsburg-----	3	0-9	10-27	1.20-1.40	0.60-2.00	0.20-0.23	0.0-2.9	4.0-6.0	.28	.28	5	4L	86
		9-33	5-18	1.30-1.50	2.00-6.00	0.20-0.23	0.0-2.9	1.0-3.0	.28	.28			
		33-80	35-85	1.10-1.40	0.0000-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28			
Woodslake-----	2	0-8	41-65	1.45-1.65	0.06-0.60	0.10-0.14	6.0-8.9	3.0-5.0	.28	.28	5	4	86
		8-15	60-85	1.35-1.45	0.0000-0.06	0.09-0.13	6.0-8.9	0.5-1.0	.28	.28			
		15-36	60-85	1.35-1.45	0.02-0.06	0.09-0.13	6.0-8.9	0.0-0.5	.28	.28			
		36-80	25-50	1.30-1.45	0.02-0.06	0.09-0.22	6.0-8.9	0.0-0.5	.43	.43			
1449:													
Grano-----	90	0-11	10-27	1.30-1.60	0.60-6.00	0.10-0.16	0.0-2.9	2.0-5.0	.24	.24	5	5	56
		11-41	35-60	1.20-1.50	0.06-0.20	0.15-0.18	6.0-8.9	1.0-3.0	.32	.32			
		41-80	22-60	1.20-1.60	0.06-0.20	0.15-0.18	6.0-8.9	0.0-0.5	.32	.32			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1449:													
Percy-----	5	0-10	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		10-25	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		25-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
Augsburg-----	3	0-9	10-27	1.20-1.40	0.60-2.00	0.20-0.23	0.0-2.9	4.0-6.0	.28	.28	5	4L	86
		9-33	5-18	1.30-1.50	2.00-6.00	0.20-0.23	0.0-2.9	1.0-3.0	.28	.28			
		33-80	35-85	1.10-1.40	0.0000-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28			
Woodslake-----	2	0-8	41-65	1.45-1.65	0.06-0.60	0.10-0.14	6.0-8.9	3.0-5.0	.28	.28	5	4	86
		8-15	60-85	1.35-1.45	0.0000-0.06	0.09-0.13	6.0-8.9	0.5-1.0	.28	.28			
		15-36	60-85	1.35-1.45	0.02-0.06	0.09-0.13	6.0-8.9	0.0-0.5	.28	.28			
		36-80	25-50	1.30-1.45	0.02-0.06	0.09-0.22	6.0-8.9	0.0-0.5	.43	.43			
1807:													
Cathro, ponded-----	90	0-19	0-0	0.15-0.35	0.20-6.00	0.45-0.55	---	60-85	---	---	2	8	0
		19-80	10-30	1.50-1.70	0.20-2.00	0.11-0.22	0.0-2.9	1.0-5.0	---	---			
Haug-----	4	0-10	---	0.13-0.42	0.60-6.00	0.35-0.48	---	50-90	---	---	5	2	134
		10-16	10-18	1.20-1.60	0.60-6.00	0.12-0.24	0.0-2.9	4.0-6.0	.20	.20			
		16-80	10-18	1.40-1.60	0.60-2.00	0.11-0.19	0.0-2.9	0.5-1.0	.20	.20			
Seelyeville, ponded---	4	0-18	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	3	8	0
		18-80	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---			
Percy-----	2	0-8	10-30	1.30-1.60	0.60-2.00	0.18-0.22	3.0-5.9	4.0-9.0	.24	.28	5	5	56
		8-23	10-18	1.30-1.60	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.24	.28			
		23-80	7-18	1.60-1.80	0.60-2.00	0.12-0.19	0.0-2.9	0.0-0.5	.24	.28			
1808:													
Markey, ponded-----	90	0-17	---	0.15-0.35	0.20-6.00	0.35-0.45	---	55-85	---	---	2	2	134
		17-80	0-10	1.40-1.65	6.00-20	0.03-0.08	0.0-2.9	0.0-0.5	.15	.15			
Leafriver-----	4	0-13	---	0.10-0.25	0.60-6.00	0.35-0.50	---	50-90	---	---	5	2	134
		13-80	0-10	1.50-1.65	6.00-20	0.03-0.08	0.0-2.9	0.5-5.0	.17	.17			
Seelyeville, ponded---	4	0-18	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	3	8	0
		18-80	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---			
Cormant-----	2	0-6	3-10	1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1918:													
Croke-----	85	0-12	10-18	1.25-1.40	2.00-6.00	0.20-0.24	0.0-2.9	3.0-7.0	.28	.28	5	3	86
		12-21	10-18	1.35-1.55	2.00-6.00	0.17-0.22	0.0-2.9	0.0-0.5	.28	.28			
		21-80	35-60	1.15-1.50	0.06-0.20	0.10-0.15	6.0-8.9	0.0-0.5	.28	.28			
Augsburg-----	13	0-9	10-27	1.20-1.40	0.60-2.00	0.20-0.23	0.0-2.9	4.0-6.0	.28	.28	5	4L	86
		9-33	5-18	1.30-1.50	2.00-6.00	0.20-0.23	0.0-2.9	1.0-3.0	.28	.28			
		33-80	35-85	1.10-1.40	0.0000-0.20	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28			
Grano-----	2	0-11	10-27	1.30-1.60	0.60-6.00	0.10-0.16	0.0-2.9	2.0-5.0	.24	.24	5	5	56
		11-41	35-60	1.20-1.50	0.06-0.20	0.15-0.18	6.0-8.9	1.0-3.0	.32	.32			
		41-80	22-60	1.20-1.60	0.06-0.20	0.15-0.18	6.0-8.9	0.0-0.5	.32	.32			
1923B:													
Garnes, very stony----	85	0-6	7-27	1.30-1.50	0.60-2.00	0.18-0.20	0.0-2.9	0.5-2.0	.32	.32	5	6	48
		6-13	18-30	1.50-1.65	0.60-2.00	0.17-0.20	3.0-5.9	0.5-1.0	.32	.32			
		13-80	10-27	1.60-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.32	.32			
Chilgren-----	10	0-5	5-18	1.30-1.60	2.00-6.00	0.16-0.18	0.0-2.9	1.0-3.0	.28	.28	5	3	86
		5-9	2-18	1.40-1.60	0.60-2.00	0.13-0.22	0.0-2.9	0.5-1.0	.28	.28			
		9-16	18-35	1.30-1.70	0.60-2.00	0.18-0.22	3.0-5.9	0.0-0.5	.28	.28			
		16-80	10-27	1.30-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.28	.28			
Eckvoll-----	3	0-6	5-15	1.30-1.70	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		6-21	2-10	1.30-1.70	6.00-20	0.06-0.08	0.0-2.9	0.5-1.0	.15	.15			
		21-26	18-35	1.40-1.70	0.20-2.00	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
		26-80	16-32	1.30-1.70	0.20-2.00	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
Pelan-----	2	0-6	5-20	1.35-1.55	2.00-6.00	0.10-0.13	0.0-2.9	0.5-3.0	.24	.24	5	3	86
		6-12	15-25	1.50-1.65	6.00-20	0.05-0.11	0.0-2.9	0.5-1.0	.20	.24			
		12-24	1-8	1.55-1.70	6.00-20	0.02-0.09	0.0-2.9	0.0-0.5	.20	.20			
		24-60	8-18	1.40-1.75	0.60-2.00	0.14-0.18	0.0-2.9	0.0-0.5	.28	.28			
1984:													
Leafriver-----	90	0-13	---	0.10-0.25	0.60-6.00	0.35-0.50	---	50-90	---	---	5	2	134
		13-80	0-10	1.50-1.65	6.00-20	0.03-0.08	0.0-2.9	0.5-5.0	.17	.17			
Cormant-----	5	0-6	3-10	1.30-1.50	6.00-20	0.08-0.12	0.0-2.9	2.0-10	.17	.17	5	2	134
		6-80	0-5	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.5-1.0	.17	.17			
Markey-----	3	0-42	---	0.15-0.35	0.20-6.00	0.35-0.45	---	55-85	---	---	2	2	134
		42-80	0-10	1.40-1.65	6.00-20	0.03-0.08	0.0-2.9	0.0-0.5	.15	.15			
Redby-----	2	0-3	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		3-28	1-8	1.55-1.70	6.00-20	0.07-0.10	0.0-2.9	0.0-0.5	.17	.17			
		28-80	0-6	1.55-1.70	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			

Table 24.--Physical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind	Wind
									Kw	Kf	T	erodi- bility group	erodi- bility index
W: Water.		In	Pct	g/cc	In/hr	In/in	Pct	Pct					

Table 25.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated.)

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
47:						
Colvin-----	85	0-11	25-40	6.6-8.4	0-10	0-1
		11-41	15-25	7.4-9.0	15-40	0-1
		41-80	10-20	7.4-8.4	5-20	0-5
Bearden-----	5	0-7	10-25	7.4-8.4	1-10	0
		7-32	10-25	7.4-8.4	10-20	0-2
		32-80	10-20	7.4-8.4	10-25	0-3
Grano-----	5	0-13	26-42	6.6-7.8	0-5	0
		13-54	18-36	7.4-8.4	5-25	0
		54-80	18-30	7.4-8.4	5-25	0
Sax-----	5	0-15	120-170	5.1-6.5	0	0
		15-24	10-58	6.1-7.3	0-5	0
		24-39	10-30	6.1-7.3	0-5	0
		39-71	5.0-30	7.4-8.4	5-20	0
		71-80	15-50	7.4-8.4	5-15	0
48B:						
Hiwood-----	85	0-3	1.0-7.0	4.5-6.0	0	0
		3-22	1.0-6.0	5.1-6.0	0	0
		22-80	1.0-6.0	5.6-7.8	0-15	0
Redby-----	7	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
Clearriver-----	3	0-2	4.0-13	5.1-6.5	0	0
		2-21	1.0-6.0	5.1-7.3	0	0
		21-80	1.0-3.0	6.6-7.8	1-10	0
Cormant-----	3	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
Zimmerman-----	2	0-6	2.0-5.0	5.1-6.5	0	0
		6-80	1.0-6.0	5.1-7.3	0	0
52:						
Augsburg-----	85	0-9	10-30	7.4-8.4	5-30	0
		9-33	1.0-15	7.4-8.4	25-40	0-3
		33-80	20-50	7.4-8.4	15-30	0-3
Croke-----	5	0-12	10-25	6.6-7.8	0-10	0
		12-21	5.0-15	6.6-8.4	0-15	0
		21-80	20-50	7.9-8.4	10-30	0
Grano-----	5	0-11	8.0-24	6.6-7.8	0-5	0
		11-41	18-36	7.4-8.4	5-25	0
		41-80	18-30	7.4-8.4	5-25	0
Sago-----	5	0-14	100-190	4.5-6.5	0	0
		14-80	4.0-20	5.6-8.4	0-20	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
59:						
Grimstad-----	85	0-10	10-18	7.4-8.4	5-15	0
		10-30	2.0-12	7.4-9.0	5-20	0-3
		30-80	4.0-16	7.4-9.0	15-35	0-3
Strathcona-----	12	0-10	10-25	7.4-8.4	5-15	0
		10-17	5.0-15	7.4-8.4	15-30	0
		17-28	2.0-8.0	7.4-8.4	5-15	0
		28-80	10-20	7.4-8.4	20-45	0
Foxhome-----	3	0-10	10-24	6.6-7.8	0	0
		10-15	2.0-8.0	6.6-7.8	0-10	0
		15-23	2.0-10	7.4-8.4	5-15	0
		23-80	6.0-18	7.4-8.4	15-30	0
64:						
Ulen-----	85	0-10	10-25	7.4-8.4	5-30	0
		10-16	0.0-10	7.9-8.4	5-30	0
		16-67	0.0-10	7.4-8.4	5-30	0
		67-80	5.0-15	7.4-8.4	5-30	0
Rosewood-----	10	0-11	8.0-24	7.4-8.4	5-20	0
		11-19	5.0-15	7.4-8.4	15-30	0
		19-65	1.0-4.0	7.4-8.4	5-25	0
		65-80	1.0-5.0	7.4-8.4	5-25	0
Redby-----	3	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
Rushlake-----	2	0-8	2.0-12	6.1-7.8	0-15	0
		8-80	1.0-6.0	7.4-8.4	5-30	0
65:						
Foxhome-----	85	0-10	10-24	6.6-7.8	0	0
		10-15	2.0-8.0	6.6-7.8	0-10	0
		15-23	2.0-10	7.4-8.4	5-15	0
		23-80	6.0-18	7.4-8.4	15-30	0
Strandquist-----	12	0-8	8.0-25	6.6-8.4	0-10	0
		8-35	2.0-10	7.4-8.4	5-15	0
		35-80	7.0-16	7.4-8.4	20-40	0
Skagen-----	3	0-9	15-30	7.4-7.8	2-20	0
		9-19	5.0-15	7.4-8.4	25-50	0
		19-80	5.0-15	7.4-8.4	20-45	0
67:						
Bearden-----	85	0-7	10-25	7.4-8.4	1-10	0
		7-32	10-25	7.4-8.4	10-20	0-2
		32-80	10-20	7.4-8.4	10-25	0-3
Colvin-----	15	0-11	25-40	6.6-8.4	0-10	0-1
		11-41	15-25	7.4-9.0	15-40	0-1
		41-80	10-20	7.4-8.4	5-20	0-5
77:						
Garnes-----	85	0-9	3.0-14	6.1-7.8	0	0
		9-14	10-18	6.6-7.8	0	0
		14-80	5.0-14	7.4-8.4	10-40	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
77:						
Chilgren-----	10	0-5	5.0-20	6.1-7.3	0	0
		5-9	2.0-20	6.1-7.3	0	0
		9-16	10-30	6.1-7.8	0-1	0
		16-80	5.0-25	7.4-8.4	10-30	0
Eckvoll-----	3	0-6	3.0-14	6.1-7.3	0	0
		6-21	1.0-7.0	6.1-7.3	0	0
		21-26	8.0-18	6.6-7.8	0	0
		26-80	6.0-16	7.4-8.4	10-30	0
Pelan-----	2	0-6	3.0-16	6.1-7.3	0	0
		6-12	7.0-15	6.1-7.8	0	0
		12-24	1.0-5.0	7.4-8.4	0-15	0
		24-60	4.0-10	7.4-8.4	15-40	0
111:						
Hangaard-----	90	0-12	10-26	6.6-7.8	0	0
		12-80	2.0-6.0	7.4-8.4	5-15	0
Deerwood-----	5	0-14	90-190	5.6-7.8	0-5	0
		14-16	8.0-30	6.1-8.4	0-15	0
		16-80	1.0-10	7.4-8.4	10-20	0
Rushlake-----	3	0-8	2.0-12	6.1-7.8	0-15	0
		8-80	1.0-6.0	7.4-8.4	5-30	0
Rosewood-----	2	0-11	8.0-24	7.4-8.4	5-20	0
		11-19	5.0-15	7.4-8.4	15-30	0
		19-65	1.0-4.0	7.4-8.4	5-25	0
		65-80	1.0-5.0	7.4-8.4	5-25	0
116:						
Redby-----	85	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
Cormant-----	8	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
Hiwood-----	6	0-3	1.0-7.0	4.5-6.0	0	0
		3-22	1.0-6.0	5.1-6.0	0	0
		22-80	1.0-6.0	5.6-7.8	0-15	0
Leafriver-----	1	0-13	100-180	4.5-7.3	0	0
		13-80	1.0-15	4.5-7.3	0	0
117:						
Cormant-----	85	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
Leafriver-----	7	0-13	100-180	4.5-7.3	0	0
		13-80	1.0-15	4.5-7.3	0	0
Epoufette-----	3	0-10	8.0-18	6.1-7.3	0	0
		10-20	4.0-10	6.6-7.8	0-10	0
		20-60	1.0-5.0	7.4-8.4	5-10	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
117:						
Redby-----	3	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
Grygla, depressional-	2	0-5	2.0-28	6.1-7.3	0	0
		5-36	1.0-8.0	6.6-7.8	0	0
		36-80	4.0-14	7.4-8.4	10-35	0
133:						
Dalbo-----	85	0-15	8.0-25	5.6-7.3	0	0
		15-23	14-40	5.1-7.3	0	0
		23-80	10-40	7.4-8.4	5-30	0
Mustinka-----	10	0-9	28-40	6.6-7.8	0	0
		9-35	20-35	6.6-7.8	0	0
		35-62	10-18	7.4-8.4	10-30	0
		62-80	10-18	7.4-8.4	10-30	0
Moranville-----	5	0-8	1.0-10	6.6-7.8	0-10	0
		8-24	1.0-5.0	6.6-7.8	0-10	0
		24-42	15-35	6.6-7.8	0-15	0
		42-80	10-30	7.4-8.4	5-30	0
145:						
Enstrom-----	85	0-6	3.0-15	6.6-7.8	0	0
		6-29	1.0-8.0	6.6-8.4	0-10	0
		29-80	5.0-18	7.4-8.4	10-40	---
Grygla-----	10	0-6	2.0-16	6.1-7.3	0	0
		6-26	1.0-8.0	6.6-7.8	0	0
		26-80	4.0-14	7.4-8.4	10-35	0
Redby-----	4	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
Pelan-----	1	0-6	3.0-16	6.1-7.3	0	0
		6-12	7.0-15	6.1-7.8	0	0
		12-24	1.0-5.0	7.4-8.4	0-15	0
		24-60	4.0-10	7.4-8.4	15-40	0
147:						
Spooner-----	85	0-6	4.0-19	5.6-7.8	0-15	0
		6-15	1.0-11	5.6-7.8	0-15	0
		15-22	11-21	6.1-7.8	0-15	0
		22-60	2.0-20	7.4-8.4	10-40	0
Baudette-----	5	0-8	5.0-22	5.6-7.3	0	0
		8-10	4.0-24	5.6-7.3	0	0
		10-30	12-30	5.6-7.8	0-5	0
		30-80	3.0-23	7.4-8.4	10-20	0
Grygla-----	5	0-6	2.0-16	6.1-7.3	0	0
		6-26	1.0-8.0	6.6-7.8	0	0
		26-80	4.0-14	7.4-8.4	10-35	0
Sago-----	5	0-14	100-190	4.5-6.5	0	0
		14-80	4.0-20	5.6-8.4	0-20	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
158B:						
Zimmerman-----	85	0-6	2.0-5.0	5.1-6.5	0	0
		6-80	1.0-6.0	5.1-7.3	0	0
Hiwood-----	6	0-3	1.0-7.0	4.5-6.0	0	0
		3-22	1.0-6.0	5.1-6.0	0	0
		22-80	1.0-6.0	5.6-7.8	0-15	0
Two Inlets-----	6	0-2	2.0-10	6.6-7.3	0	0
		2-4	1.0-10	6.1-6.5	0	0
		4-17	3.0-15	6.1-6.5	0	0
		17-80	0.0-3.0	6.6-7.3	0	0
Redby-----	3	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
167B:						
Baudette-----	85	0-8	5.0-22	5.6-7.3	0	0
		8-10	4.0-24	5.6-7.3	0	0
		10-30	12-30	5.6-7.8	0-5	0
		30-80	3.0-23	7.4-8.4	10-20	0
Spooner-----	10	0-6	4.0-19	5.6-7.8	0-15	0
		6-15	1.0-11	5.6-7.8	0-15	0
		15-22	11-21	6.1-7.8	0-15	0
		22-60	2.0-20	7.4-8.4	10-40	0
Moranville-----	5	0-8	1.0-10	6.6-7.8	0-10	0
		8-24	1.0-5.0	6.6-7.8	0-10	0
		24-42	15-35	6.6-7.8	0-15	0
		42-80	10-30	7.4-8.4	5-30	0
187:						
Haug-----	90	0-10	100-180	6.6-7.8	0-5	0
		10-16	14-26	6.6-8.4	5-30	0
		16-80	10-16	7.4-8.4	5-30	0
Percy-----	5	0-10	13-33	6.6-8.4	0-20	0
		10-25	6.0-11	7.4-8.4	25-50	0
		25-80	5.0-10	7.4-8.4	20-45	0
Cathro-----	3	0-8	120-170	4.5-7.8	0	0
		8-40	120-170	4.5-7.8	0	0
		40-80	5.0-25	6.6-8.4	5-25	0
Boash-----	2	0-9	20-32	6.6-7.8	0-10	0
		9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
191:						
Epoufette-----	85	0-10	8.0-18	6.1-7.3	0	0
		10-20	4.0-10	6.6-7.8	0-10	0
		20-60	1.0-5.0	7.4-8.4	5-10	0
Cormant-----	5	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
Leafriver-----	5	0-13	100-180	4.5-7.3	0	0
		13-80	1.0-15	4.5-7.3	0	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
191:						
Meehan-----	5	0-8	2.0-15	3.5-7.3	0	0
		8-31	1.0-8.0	3.5-6.5	0	0
		31-80	0.0-4.0	3.5-7.3	0	0
202:						
Meehan-----	85	0-8	2.0-15	3.5-7.3	0	0
		8-31	1.0-8.0	3.5-6.5	0	0
		31-80	0.0-4.0	3.5-7.3	0	0
Cormant-----	8	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
Wurtsmith-----	5	0-5	2.0-10	4.5-7.3	0	0
		5-45	0.0-7.0	4.5-6.5	0	0
		45-80	0.0-4.0	5.1-7.8	0	0
Leafriver-----	2	0-13	100-180	4.5-7.3	0	0
		13-80	1.0-15	4.5-7.3	0	0
205:						
Karlstad-----	85	0-7	2.0-15	4.5-7.3	0	0
		7-10	2.0-15	6.1-7.3	0-15	0
		10-14	1.0-15	6.1-7.8	0-15	0
		14-80	0.0-1.0	7.4-8.4	5-30	0
Sahkahtay-----	7	0-4	6.0-15	5.6-7.3	0	0
		4-8	2.0-8.0	5.6-7.3	0	0
		8-14	10-16	6.1-7.3	0	0
		14-80	1.0-4.0	7.4-8.4	5-15	0
Marquette-----	5	0-7	2.0-12	5.6-7.3	0	0
		7-16	3.0-12	6.6-8.4	0	0
		16-80	1.0-4.0	7.4-8.4	5-20	0
Redby-----	2	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
Pits, gravel-----	1	---	---	---	---	---
242B:						
Marquette-----	85	0-7	2.0-12	5.6-7.3	0	0
		7-16	3.0-12	6.6-8.4	0	0
		16-80	1.0-4.0	7.4-8.4	5-20	0
Karlstad-----	14	0-7	2.0-15	4.5-7.3	0	0
		7-10	2.0-15	6.1-7.3	0-15	0
		10-14	1.0-15	6.1-7.8	0-15	0
		14-80	0.0-1.0	7.4-8.4	5-30	0
Pits, gravel-----	1	---	---	---	---	---
280:						
Pelan-----	85	0-6	3.0-16	6.1-7.3	0	0
		6-12	7.0-15	6.1-7.8	0	0
		12-24	1.0-5.0	7.4-8.4	0-15	0
		24-60	4.0-10	7.4-8.4	15-40	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
280:						
Strandquist-----	10	0-8	8.0-25	6.6-8.4	0-10	0
		8-35	2.0-10	7.4-8.4	5-15	0
		35-80	7.0-16	7.4-8.4	20-40	0
Garnes-----	3	0-9	3.0-14	6.1-7.8	0	0
		9-14	10-18	6.6-7.8	0	0
		14-80	5.0-14	7.4-8.4	10-40	0
Marquette-----	1	0-7	2.0-12	5.6-7.3	0	0
		7-16	3.0-12	6.6-8.4	0	0
		16-80	1.0-4.0	7.4-8.4	5-20	0
Pits, gravel-----	1	---	---	---	---	---
379:						
Percy, very cobbly---	90	0-8	13-33	6.6-8.4	0-20	0
		8-23	6.0-11	7.4-8.4	25-50	0
		23-80	5.0-10	7.4-8.4	20-45	0
Boash-----	3	0-9	20-32	6.6-7.8	0-10	0
		9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
Strandquist-----	3	0-8	8.0-25	6.6-8.4	0-10	0
		8-35	2.0-10	7.4-8.4	5-15	0
		35-80	7.0-16	7.4-8.4	20-40	0
Haug-----	2	0-10	100-180	6.6-7.8	0-5	0
		10-16	14-26	6.6-8.4	5-30	0
		16-80	10-16	7.4-8.4	5-30	0
Skagen, very cobbly--	2	0-10	15-30	7.4-7.8	2-20	0
		10-28	5.0-15	7.4-8.4	25-50	0
		28-80	5.0-15	7.4-8.4	20-45	0
383:						
Percy-----	90	0-10	13-33	6.6-8.4	0-20	0
		10-25	6.0-11	7.4-8.4	25-50	0
		25-80	5.0-10	7.4-8.4	20-45	0
Boash-----	3	0-9	20-32	6.6-7.8	0-10	0
		9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
Strandquist-----	3	0-8	8.0-25	6.6-8.4	0-10	0
		8-35	2.0-10	7.4-8.4	5-15	0
		35-80	7.0-16	7.4-8.4	20-40	0
Haug-----	2	0-10	100-180	6.6-7.8	0-5	0
		10-16	14-26	6.6-8.4	5-30	0
		16-80	10-16	7.4-8.4	5-30	0
Skagen-----	2	0-9	15-30	7.4-7.8	2-20	0
		9-19	5.0-15	7.4-8.4	25-50	0
		19-80	5.0-15	7.4-8.4	20-45	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
384:						
Percy, depressional--	85	0-8	13-33	6.6-8.4	0-20	0
		8-27	10-20	7.4-8.4	25-50	0
		27-80	4.0-10	7.4-8.4	20-45	0
Haug-----	7	0-10	100-180	6.6-7.8	0-5	0
		10-16	14-26	6.6-8.4	5-30	0
		16-80	10-16	7.4-8.4	5-30	0
Percy-----	5	0-10	13-33	6.6-8.4	0-20	0
		10-25	6.0-11	7.4-8.4	25-50	0
		25-80	5.0-10	7.4-8.4	20-45	0
Boash-----	3	0-9	20-32	6.6-7.8	0-10	0
		9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
387:						
Roliss, depressional-	85	0-8	15-28	6.6-8.4	5-10	0
		8-13	10-18	7.4-8.4	5-15	0-3
		13-80	8.0-16	7.4-8.4	20-35	0-3
Haug-----	10	0-10	100-180	6.6-7.8	0-5	0
		10-16	14-26	6.6-8.4	5-30	0
		16-80	10-16	7.4-8.4	5-30	0
Roliss-----	5	0-14	15-28	6.6-8.4	5-10	0
		14-20	10-18	7.4-8.4	5-15	0-1
		20-80	8.0-16	7.4-8.4	20-35	0-1
404:						
Chilgren-----	85	0-5	5.0-20	6.1-7.3	0	0
		5-9	2.0-20	6.1-7.3	0	0
		9-16	10-30	6.1-7.8	0-1	0
		16-80	5.0-25	7.4-8.4	10-30	0
Garnes-----	5	0-9	3.0-14	6.1-7.8	0	0
		9-14	10-18	6.6-7.8	0	0
		14-80	5.0-14	7.4-8.4	10-40	0
Grygla-----	5	0-6	2.0-16	6.1-7.3	0	0
		6-26	1.0-8.0	6.6-7.8	0	0
		26-80	4.0-14	7.4-8.4	10-35	0
Haug-----	5	0-10	100-180	6.6-7.8	0-5	0
		10-16	14-26	6.6-8.4	5-30	0
		16-80	10-16	7.4-8.4	5-30	0
412:						
Mavie-----	85	0-12	10-22	7.4-8.4	5-20	0
		12-18	6.0-20	7.9-8.4	15-40	0
		18-39	1.0-6.0	7.4-8.4	10-25	0
		39-80	9.0-18	7.4-8.4	10-30	0-3
Foxhome-----	5	0-10	10-24	6.6-7.8	0	0
		10-15	2.0-8.0	6.6-7.8	0-10	0
		15-23	2.0-10	7.4-8.4	5-15	0
		23-80	6.0-18	7.4-8.4	15-30	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
412:						
Northwood-----	5	0-11	100-170	5.1-7.8	0	0
		11-16	5.0-15	5.6-7.8	0-15	0
		16-25	1.0-10	5.6-8.4	5-30	0
		25-80	5.0-25	7.4-8.4	5-30	0
Percy, very cobbly---	5	0-8	13-33	6.6-8.4	0-20	0
		8-23	6.0-11	7.4-8.4	25-50	0
		23-80	5.0-10	7.4-8.4	20-45	0
432:						
Strandquist-----	85	0-8	8.0-25	6.6-8.4	0-10	0
		8-35	2.0-10	7.4-8.4	5-15	0
		35-80	7.0-16	7.4-8.4	20-40	0
Percy, very cobbly---	5	0-8	13-33	6.6-8.4	0-20	0
		8-23	6.0-11	7.4-8.4	25-50	0
		23-80	5.0-10	7.4-8.4	20-45	0
Haug-----	4	0-10	100-180	6.6-7.8	0-5	0
		10-16	14-26	6.6-8.4	5-30	0
		16-80	10-16	7.4-8.4	5-30	0
Boash-----	3	0-9	20-32	6.6-7.8	0-10	0
		9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
Foxhome-----	3	0-10	10-24	6.6-7.8	0	0
		10-15	2.0-8.0	6.6-7.8	0-10	0
		15-23	2.0-10	7.4-8.4	5-15	0
		23-80	6.0-18	7.4-8.4	15-30	0
433:						
Syrene, depressional-	85	0-12	10-25	7.4-8.4	5-30	0
		12-18	10-35	7.9-8.4	15-35	0
		18-80	1.0-10	7.4-8.4	10-30	0
Deerwood-----	5	0-14	90-190	5.6-7.8	0-5	0
		14-16	8.0-30	6.1-8.4	0-15	0
		16-80	1.0-10	7.4-8.4	10-20	0
Rosewood-----	5	0-11	8.0-24	7.4-8.4	5-20	0
		11-19	5.0-15	7.4-8.4	15-30	0
		19-65	1.0-4.0	7.4-8.4	5-25	0
		65-80	1.0-5.0	7.4-8.4	5-25	0
Syrene-----	5	0-11	10-25	7.4-8.4	5-30	0
		11-19	10-35	7.9-8.4	15-35	0
		19-80	1.0-10	7.4-8.4	10-30	0
435:						
Syrene-----	85	0-11	10-25	7.4-8.4	5-30	0
		11-19	10-35	7.9-8.4	15-35	0
		19-80	1.0-10	7.4-8.4	10-30	0
Rosewood-----	5	0-11	8.0-24	7.4-8.4	5-20	0
		11-19	5.0-15	7.4-8.4	15-30	0
		19-65	1.0-4.0	7.4-8.4	5-25	0
		65-80	1.0-5.0	7.4-8.4	5-25	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
435:						
Syrene, depressional-	5	0-12	10-25	7.4-8.4	5-30	0
		12-18	10-35	7.9-8.4	15-35	0
		18-80	1.0-10	7.4-8.4	10-30	0
Karlsruhe-----	3	0-8	11-22	6.6-8.4	5-30	0
		8-16	7.0-14	6.6-8.4	15-30	0
		16-80	0.0-3.0	7.4-8.4	10-25	0
Deerwood-----	2	0-14	90-190	5.6-7.8	0-5	0
		14-16	8.0-30	6.1-8.4	0-15	0
		16-80	1.0-10	7.4-8.4	10-20	0
439:						
Strathcona-----	85	0-10	10-25	7.4-8.4	5-15	0
		10-17	5.0-15	7.4-8.4	15-30	0
		17-28	2.0-8.0	7.4-8.4	5-15	0
		28-80	10-20	7.4-8.4	20-45	0
Northwood-----	5	0-11	100-170	5.1-7.8	0	0
		11-16	5.0-15	5.6-7.8	0-15	0
		16-25	1.0-10	5.6-8.4	5-30	0
		25-80	5.0-25	7.4-8.4	5-30	0
Percy-----	5	0-10	13-33	6.6-8.4	0-20	0
		10-25	6.0-11	7.4-8.4	25-50	0
		25-80	5.0-10	7.4-8.4	20-45	0
Grimstad-----	3	0-10	10-18	7.4-8.4	5-15	0
		10-30	2.0-12	7.4-9.0	5-20	0-3
		30-80	4.0-16	7.4-9.0	15-35	0-3
Strandquist-----	2	0-8	8.0-25	6.6-8.4	0-10	0
		8-35	2.0-10	7.4-8.4	5-15	0
		35-80	7.0-16	7.4-8.4	20-40	0
481:						
Kratka-----	85	0-8	6.0-20	5.6-7.8	0-15	0
		8-22	1.0-8.0	5.6-7.8	0-15	0
		22-80	4.0-21	6.1-8.4	0-30	0
Northwood-----	5	0-11	100-170	5.1-7.8	0	0
		11-16	5.0-15	5.6-7.8	0-15	0
		16-25	1.0-10	5.6-8.4	5-30	0
		25-80	5.0-25	7.4-8.4	5-30	0
Percy-----	5	0-10	13-33	6.6-8.4	0-20	0
		10-25	6.0-11	7.4-8.4	25-50	0
		25-80	5.0-10	7.4-8.4	20-45	0
Enstrom-----	3	0-6	3.0-15	6.6-7.8	0	0
		6-29	1.0-8.0	6.6-8.4	0-10	0
		29-80	5.0-18	7.4-8.4	10-40	---
Strandquist-----	2	0-8	8.0-25	6.6-8.4	0-10	0
		8-35	2.0-10	7.4-8.4	5-15	0
		35-80	7.0-16	7.4-8.4	20-40	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
482:						
Grygla-----	85	0-6	2.0-16	6.1-7.3	0	0
		6-26	1.0-8.0	6.6-7.8	0	0
		26-80	4.0-14	7.4-8.4	10-35	0
Chilgren-----	5	0-5	5.0-20	6.1-7.3	0	0
		5-9	2.0-20	6.1-7.3	0	0
		9-16	10-30	6.1-7.8	0-1	0
		16-80	5.0-25	7.4-8.4	10-30	0
Grygla, depressional-	5	0-5	2.0-28	6.1-7.3	0	0
		5-36	1.0-8.0	6.6-7.8	0	0
		36-80	4.0-14	7.4-8.4	10-35	0
Enstrom-----	3	0-6	3.0-15	6.6-7.8	0	0
		6-29	1.0-8.0	6.6-8.4	0-10	0
		29-80	5.0-18	7.4-8.4	10-40	---
Northwood-----	2	0-11	100-170	5.1-7.8	0	0
		11-16	5.0-15	5.6-7.8	0-15	0
		16-25	1.0-10	5.6-8.4	5-30	0
		25-80	5.0-25	7.4-8.4	5-30	0
532:						
Sago-----	90	0-14	100-190	4.5-6.5	0	0
		14-80	4.0-20	5.6-8.4	0-20	0
Cathro-----	5	0-8	120-170	4.5-7.8	0	0
		8-40	120-170	4.5-7.8	0	0
		40-80	5.0-25	6.6-8.4	5-25	0
Zippel-----	5	0-10	5.0-30	6.6-7.8	0-5	0
		10-16	3.0-15	6.6-7.8	0-15	0
		16-80	3.0-15	7.4-8.4	5-30	0
534:						
Mooselake-----	90	0-16	140-180	4.5-7.3	0	0
		16-80	140-180	4.5-7.3	0	0
Bullwinkle-----	4	0-16	120-170	5.6-7.3	0	0
		16-48	120-170	5.6-7.3	0	0
		48-80	10-20	6.6-8.4	0-30	0
Dora-----	3	0-8	40-180	4.5-7.8	0	0
		8-26	40-180	4.5-7.8	0	0
		26-80	18-31	6.1-8.4	0-20	0
Tawas-----	3	0-10	80-120	4.5-7.8	0-5	0
		10-27	80-120	4.5-7.8	0-5	0
		27-80	1.0-6.0	5.6-8.4	0-30	0
540:						
Seelyeville-----	90	0-12	140-200	4.5-7.3	0	0
		12-80	140-200	4.5-7.3	0	0
Cathro-----	4	0-8	120-170	4.5-7.8	0	0
		8-40	120-170	4.5-7.8	0	0
		40-80	5.0-25	6.6-8.4	5-25	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
540:						
Dora-----	3	0-5	40-180	4.5-7.8	0	0
		5-31	40-180	4.5-7.8	0	0
		31-80	18-31	6.1-8.4	0-20	0
Markey-----	3	0-42	110-170	4.5-7.8	0-5	0
		42-80	1.0-3.0	5.6-8.4	0-5	0
541:						
Rifle-----	90	0-8	150-180	4.5-7.3	0	0
		8-80	50-150	4.5-7.3	0	0
Tacoosh-----	10	0-17	150-200	5.6-7.8	0	0
		17-33	150-200	5.6-7.8	0	0
		33-80	10-30	6.6-8.4	0-30	0
543:						
Markey-----	90	0-42	110-170	4.5-7.8	0-5	0
		42-80	1.0-3.0	5.6-8.4	0-5	0
Cormant-----	5	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
Seelyeville-----	5	0-12	140-200	4.5-7.3	0	0
		12-80	140-200	4.5-7.3	0	0
544:						
Cathro-----	90	0-8	120-170	4.5-7.8	0	0
		8-40	120-170	4.5-7.8	0	0
		40-80	5.0-25	6.6-8.4	5-25	0
Percy, very cobbly---	4	0-8	13-33	6.6-8.4	0-20	0
		8-23	6.0-11	7.4-8.4	25-50	0
		23-80	5.0-10	7.4-8.4	20-45	0
Grygla-----	3	0-6	2.0-16	6.1-7.3	0	0
		6-26	1.0-8.0	6.6-7.8	0	0
		26-80	4.0-14	7.4-8.4	10-35	0
Seelyeville-----	3	0-12	140-200	4.5-7.3	0	0
		12-80	140-200	4.5-7.3	0	0
546:						
Lupton-----	90	0-16	100-200	4.5-7.8	0	0
		16-80	100-200	4.5-7.8	0	0
Bullwinkle-----	4	0-16	120-170	5.6-7.3	0	0
		16-48	120-170	5.6-7.3	0	0
		48-80	10-20	6.6-8.4	0-30	0
Dora-----	3	0-8	40-180	4.5-7.8	0	0
		8-26	40-180	4.5-7.8	0	0
		26-80	18-31	6.1-8.4	0-20	0
Tawas-----	3	0-10	80-120	4.5-7.8	0-5	0
		10-27	80-120	4.5-7.8	0-5	0
		27-80	1.0-6.0	5.6-8.4	0-30	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
547:						
Deerwood-----	90	0-14	90-190	5.6-7.8	0-5	0
		14-16	8.0-30	6.1-8.4	0-15	0
		16-80	1.0-10	7.4-8.4	10-20	0
Markey-----	4	0-42	110-170	4.5-7.8	0-5	0
		42-80	1.0-3.0	5.6-8.4	0-5	0
Rosewood-----	3	0-11	8.0-24	7.4-8.4	5-20	0
		11-19	5.0-15	7.4-8.4	15-30	0
		19-65	1.0-4.0	7.4-8.4	5-25	0
		65-80	1.0-5.0	7.4-8.4	5-25	0
Syrene-----	3	0-11	10-25	7.4-8.4	5-30	0
		11-19	10-35	7.9-8.4	15-35	0
		19-80	1.0-10	7.4-8.4	10-30	0
550:						
Dora-----	90	0-5	40-180	4.5-7.8	0	0
		5-31	40-180	4.5-7.8	0	0
		31-80	18-31	6.1-8.4	0-20	0
Boash-----	4	0-9	20-32	6.6-7.8	0-10	0
		9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
Seelyeville-----	3	0-12	140-200	4.5-7.3	0	0
		12-80	140-200	4.5-7.3	0	0
Woodslake-----	3	0-8	35-55	6.6-7.8	0	0
		8-15	42-62	6.6-8.4	0	0
		15-36	40-60	7.4-8.4	5-30	0
		36-80	18-36	7.4-8.4	5-30	0
561:						
Bullwinkle-----	90	0-16	120-170	5.6-7.3	0	0
		16-48	120-170	5.6-7.3	0	0
		48-80	10-20	6.6-8.4	0-30	0
Lupton-----	4	0-16	100-200	4.5-7.8	0	0
		16-80	100-200	4.5-7.8	0	0
Northwood, wooded----	4	0-15	100-170	5.1-7.8	0	0
		15-21	5.0-15	5.6-7.8	0-15	0
		21-39	1.0-10	5.6-8.4	5-30	0
		39-80	5.0-25	7.4-8.4	5-30	0
Chilgren-----	2	0-5	5.0-20	6.1-7.3	0	0
		5-9	2.0-20	6.1-7.3	0	0
		9-16	10-30	6.1-7.8	0-1	0
		16-80	5.0-25	7.4-8.4	10-30	0
563:						
Northwood-----	90	0-11	100-170	5.1-7.8	0	0
		11-16	5.0-15	5.6-7.8	0-15	0
		16-25	1.0-10	5.6-8.4	5-30	0
		25-80	5.0-25	7.4-8.4	5-30	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
563:						
Grygla-----	4	0-6	2.0-16	6.1-7.3	0	0
		6-26	1.0-8.0	6.6-7.8	0	0
		26-80	4.0-14	7.4-8.4	10-35	0
Berner-----	3	0-23	115-160	5.6-7.3	0	0
		23-41	2.0-8.0	6.1-7.8	0-5	0
		41-80	10-20	7.4-8.4	15-35	0
Strandquist-----	3	0-8	8.0-25	6.6-8.4	0-10	0
		8-35	2.0-10	7.4-8.4	5-15	0
		35-80	7.0-16	7.4-8.4	20-40	0
565:						
Eckvoll-----	85	0-6	3.0-14	6.1-7.3	0	0
		6-21	1.0-7.0	6.1-7.3	0	0
		21-26	8.0-18	6.6-7.8	0	0
		26-80	6.0-16	7.4-8.4	10-30	0
Chilgren-----	5	0-5	5.0-20	6.1-7.3	0	0
		5-9	2.0-20	6.1-7.3	0	0
		9-16	10-30	6.1-7.8	0-1	0
		16-80	5.0-25	7.4-8.4	10-30	0
Grygla-----	5	0-6	2.0-16	6.1-7.3	0	0
		6-26	1.0-8.0	6.6-7.8	0	0
		26-80	4.0-14	7.4-8.4	10-35	0
Hiwood-----	5	0-3	1.0-7.0	4.5-6.0	0	0
		3-22	1.0-6.0	5.1-6.0	0	0
		22-80	1.0-6.0	5.6-7.8	0-15	0
568:						
Zippel-----	85	0-10	5.0-30	6.6-7.8	0-5	0
		10-16	3.0-15	6.6-7.8	0-15	0
		16-80	3.0-15	7.4-8.4	5-30	0
Augsburg, depressional-----	5	0-9	10-30	7.4-8.4	5-30	0
		9-16	1.0-15	7.4-8.4	25-40	0-3
		16-32	1.0-15	7.4-8.4	30-35	0-3
		32-80	20-50	7.4-8.4	10-30	0-3
Sago-----	5	0-14	100-190	4.5-6.5	0	0
		14-80	4.0-20	5.6-8.4	0-20	0
Skime-----	5	0-6	5.0-10	6.1-7.3	0-5	0
		6-17	2.0-10	6.1-7.3	0-5	0
		17-22	5.0-15	6.1-7.3	0-5	0
		22-72	1.0-10	6.6-8.4	0-10	0
		72-80	1.0-15	6.6-8.4	5-15	0
569:						
Wabanica-----	85	0-8	15-25	6.6-7.8	5-15	0
		8-19	10-30	6.6-7.8	5-15	0
		19-80	10-30	7.4-8.4	10-30	0
Warroad-----	6	0-11	5.0-25	6.6-7.8	0	0
		11-26	1.0-10	7.4-7.8	0	0
		26-80	10-30	7.4-8.4	5-30	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
569:						
Sax-----	4	0-15	120-170	5.1-6.5	0	0
		15-24	10-58	6.1-7.3	0-5	0
		24-39	10-30	6.1-7.3	0-5	0
		39-71	5.0-30	7.4-8.4	5-20	0
		71-80	15-50	7.4-8.4	5-15	0
Grano-----	3	0-11	8.0-24	6.6-7.8	0-5	0
		11-41	18-36	7.4-8.4	5-25	0
		41-80	18-30	7.4-8.4	5-25	0
Enstrom-----	2	0-6	3.0-15	6.6-7.8	0	0
		6-29	1.0-8.0	6.6-8.4	0-10	0
		29-80	5.0-18	7.4-8.4	10-40	---
570:						
Faunce-----	85	0-2	2.0-10	5.1-6.5	0	0
		2-14	2.0-10	5.1-6.5	0	0
		14-24	2.0-10	5.1-7.3	0	0
		24-80	0.0-5.0	6.6-7.8	0-5	0
Clearriver-----	7	0-2	4.0-13	5.1-6.5	0	0
		2-21	1.0-6.0	5.1-7.3	0	0
		21-80	1.0-3.0	6.6-7.8	1-10	0
Zimmerman-----	4	0-6	2.0-5.0	5.1-6.5	0	0
		6-80	1.0-6.0	5.1-7.3	0	0
Meehan-----	3	0-8	2.0-15	3.5-7.3	0	0
		8-31	1.0-8.0	3.5-6.5	0	0
		31-80	0.0-4.0	3.5-7.3	0	0
Pits, gravel-----	1	---	---	---	---	---
581:						
Percy-----	90	0-11	13-28	6.6-8.4	0-20	0
		11-15	6.0-11	7.4-8.4	25-45	0
		15-60	5.0-10	7.4-8.4	20-40	0
Haug-----	5	0-10	100-180	6.6-7.8	0-5	0
		10-16	14-26	6.6-8.4	5-30	0
		16-80	10-16	7.4-8.4	5-30	0
Boash-----	3	0-9	20-32	6.6-7.8	0-10	0
		9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
Skagen-----	2	0-9	15-30	7.4-7.8	2-20	0
		9-19	5.0-15	7.4-8.4	25-50	0
		19-80	5.0-15	7.4-8.4	20-45	0
582:						
Roliss-----	85	0-14	15-28	6.6-8.4	5-10	0
		14-20	10-18	7.4-8.4	5-15	0-1
		20-80	8.0-16	7.4-8.4	20-35	0-1
Roliss, depressional-	7	0-8	15-28	6.6-8.4	5-10	0
		8-13	10-18	7.4-8.4	5-15	0-3
		13-80	8.0-16	7.4-8.4	20-35	0-3

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
582:						
Boash-----	5	0-9	20-32	6.6-7.8	0-10	0
		9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
Haug-----	3	0-10	100-180	6.6-7.8	0-5	0
		10-16	14-26	6.6-8.4	5-30	0
		16-80	10-16	7.4-8.4	5-30	0
583:						
Nereson-----	85	0-7	10-14	6.1-7.3	0	0
		7-11	5.0-13	6.6-7.8	0-5	0
		11-29	3.0-12	7.4-8.4	15-30	0
		29-80	3.0-12	7.4-8.4	10-30	0
Percy-----	10	0-10	13-33	6.6-8.4	0-20	0
		10-25	6.0-11	7.4-8.4	25-50	0
		25-80	5.0-10	7.4-8.4	20-45	0
Pelan-----	3	0-6	3.0-16	6.1-7.3	0	0
		6-12	7.0-15	6.1-7.8	0	0
		12-24	1.0-5.0	7.4-8.4	0-15	0
		24-60	4.0-10	7.4-8.4	15-40	0
Foxhome-----	2	0-10	10-24	6.6-7.8	0	0
		10-15	2.0-8.0	6.6-7.8	0-10	0
		15-23	2.0-10	7.4-8.4	5-15	0
		23-80	6.0-18	7.4-8.4	15-30	0
627:						
Tawas-----	90	0-10	80-120	4.5-7.8	0-5	0
		10-27	80-120	4.5-7.8	0-5	0
		27-80	1.0-6.0	5.6-8.4	0-30	0
Leafriver-----	4	0-10	100-180	4.5-7.3	0	0
		10-13	10-50	4.5-7.3	0	0
		13-80	1.0-15	4.5-7.3	0	0
Lupton-----	4	0-16	100-200	4.5-7.8	0	0
		16-80	100-200	4.5-7.8	0	0
Cormant-----	2	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
630:						
Wildwood-----	90	0-12	140-200	5.1-6.5	0	0
		12-33	30-60	5.6-7.3	0	0
		33-80	30-60	7.4-8.4	5-30	0
Boash-----	4	0-9	20-32	6.6-7.8	0-10	0
		9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
Dora-----	4	0-5	40-180	4.5-7.8	0	0
		5-31	40-180	4.5-7.8	0	0
		31-80	18-31	6.1-8.4	0-20	0
Espelie-----	2	0-10	8.0-18	6.6-7.3	0	0
		10-27	2.0-8.0	6.6-7.8	0-15	0
		27-80	16-30	7.4-8.4	10-30	0-3

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
643:						
Huot-----	85	0-14	5.0-20	7.4-8.4	5-30	0
		14-26	5.0-25	7.4-8.4	5-35	0
		26-34	2.0-20	7.4-8.4	5-30	0
		34-80	20-75	7.4-8.4	5-30	0
Thiefriver-----	12	0-10	8.0-17	7.4-8.4	5-15	0
		10-16	4.0-11	7.4-8.4	10-25	0
		16-35	1.0-6.0	7.4-8.4	5-10	0
		35-80	24-50	7.4-8.4	5-15	0
Redby-----	3	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
644:						
Boash-----	85	0-9	20-32	6.6-7.8	0-10	0
		9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
Percy-----	7	0-10	13-33	6.6-8.4	0-20	0
		10-25	6.0-11	7.4-8.4	25-50	0
		25-80	5.0-10	7.4-8.4	20-45	0
Woodslake-----	5	0-8	35-55	6.6-7.8	0	0
		8-15	42-62	6.6-8.4	0	0
		15-36	40-60	7.4-8.4	5-30	0
		36-80	18-36	7.4-8.4	5-30	0
Strandquist-----	3	0-8	8.0-25	6.6-8.4	0-10	0
		8-35	2.0-10	7.4-8.4	5-15	0
		35-80	7.0-16	7.4-8.4	20-40	0
645:						
Espelie-----	85	0-10	8.0-18	6.6-7.3	0	0
		10-27	2.0-8.0	6.6-7.8	0-15	0
		27-80	16-30	7.4-8.4	10-30	0-3
Grano-----	5	0-11	8.0-24	6.6-7.8	0-5	0
		11-41	18-36	7.4-8.4	5-25	0
		41-80	18-30	7.4-8.4	5-25	0
Hilaire-----	5	0-13	8.0-18	6.6-7.3	0-10	0
		13-33	3.0-10	6.6-7.8	0-10	0
		33-80	16-30	7.4-8.4	10-30	0
Wildwood-----	5	0-12	140-200	5.1-6.5	0	0
		12-33	30-60	5.6-7.3	0	0
		33-80	30-60	7.4-8.4	5-30	0
651:						
Thiefriver-----	85	0-10	8.0-17	7.4-8.4	5-15	0
		10-16	4.0-11	7.4-8.4	10-25	0
		16-35	1.0-6.0	7.4-8.4	5-10	0
		35-80	24-50	7.4-8.4	5-15	0
Grano-----	5	0-11	8.0-24	6.6-7.8	0-5	0
		11-41	18-36	7.4-8.4	5-25	0
		41-80	18-30	7.4-8.4	5-25	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
651:						
Huot-----	5	0-14	5.0-20	7.4-8.4	5-30	0
		14-26	5.0-25	7.4-8.4	5-35	0
		26-34	2.0-20	7.4-8.4	5-30	0
		34-80	20-75	7.4-8.4	5-30	0
Wildwood-----	5	0-12	140-200	5.1-6.5	0	0
		12-33	30-60	5.6-7.3	0	0
		33-80	30-60	7.4-8.4	5-30	0
708:						
Rushlake-----	85	0-8	2.0-12	6.1-7.8	0-15	0
		8-80	1.0-6.0	7.4-8.4	5-30	0
Corliss-----	6	0-8	3.0-12	6.1-7.8	0-15	0
		8-80	0.0-4.0	6.1-7.8	0-15	0
Redby-----	5	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
Hangaard-----	3	0-12	10-26	6.6-7.8	0	0
		12-80	2.0-6.0	7.4-8.4	5-15	0
Pits, gravel-----	1	---	---	---	---	---
712:						
Rosewood-----	85	0-11	8.0-24	7.4-8.4	5-20	0
		11-19	5.0-15	7.4-8.4	15-30	0
		19-65	1.0-4.0	7.4-8.4	5-25	0
		65-80	1.0-5.0	7.4-8.4	5-25	0
Deerwood-----	6	0-14	90-190	5.6-7.8	0-5	0
		14-16	8.0-30	6.1-8.4	0-15	0
		16-80	1.0-10	7.4-8.4	10-20	0
Hangaard-----	5	0-12	10-26	6.6-7.8	0	0
		12-80	2.0-6.0	7.4-8.4	5-15	0
Ulen-----	4	0-10	10-25	7.4-8.4	5-30	0
		10-16	0.0-10	7.9-8.4	5-30	0
		16-67	0.0-10	7.4-8.4	5-30	0
		67-80	5.0-15	7.4-8.4	5-30	0
721B:						
Corliss-----	85	0-8	3.0-12	6.1-7.8	0-15	0
		8-80	0.0-4.0	6.1-7.8	0-15	0
Rushlake-----	10	0-8	2.0-12	6.1-7.8	0-15	0
		8-80	1.0-6.0	7.4-8.4	5-30	0
Hangaard-----	4	0-12	10-26	6.6-7.8	0	0
		12-80	2.0-6.0	7.4-8.4	5-15	0
Pits, gravel-----	1	---	---	---	---	---
733:						
Berner-----	90	0-23	115-160	5.6-7.3	0	0
		23-41	2.0-8.0	6.1-7.8	0-5	0
		41-80	10-20	7.4-8.4	15-35	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
733:						
Grygla-----	5	0-6	2.0-16	6.1-7.3	0	0
		6-26	1.0-8.0	6.6-7.8	0	0
		26-80	4.0-14	7.4-8.4	10-35	0
Seelyeville-----	5	0-12	140-200	4.5-7.3	0	0
		12-80	140-200	4.5-7.3	0	0
737:						
Mahkonce-----	85	0-3	10-25	5.6-7.3	0	0
		3-5	10-25	5.6-7.3	0	0
		5-16	25-30	6.1-7.3	0	0
		16-23	10-20	6.1-7.8	5-15	0
		23-80	10-20	7.4-8.4	15-30	0
Auganaush-----	10	0-5	15-30	5.6-7.3	0	0
		5-7	5.0-15	5.6-7.3	0	0
		7-18	15-30	5.6-7.3	0	0
		18-58	15-25	7.4-8.4	15-30	0
		58-80	10-30	7.4-8.4	15-30	0
Eckvoll-----	5	0-6	3.0-14	6.1-7.3	0	0
		6-21	1.0-7.0	6.1-7.3	0	0
		21-26	8.0-18	6.6-7.8	0	0
		26-80	6.0-16	7.4-8.4	10-30	0
755:						
Woodslake-----	85	0-8	35-55	6.6-7.8	0	0
		8-15	42-62	6.6-8.4	0	0
		15-36	40-60	7.4-8.4	5-30	0
		36-80	18-36	7.4-8.4	5-30	0
Boash-----	8	0-9	20-32	6.6-7.8	0-10	0
		9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
Wildwood-----	5	0-12	140-200	5.1-6.5	0	0
		12-33	30-60	5.6-7.3	0	0
		33-80	30-60	7.4-8.4	5-30	0
Dora-----	2	0-5	40-180	4.5-7.8	0	0
		5-31	40-180	4.5-7.8	0	0
		31-80	18-31	6.1-8.4	0-20	0
767:						
Auganaush-----	90	0-5	15-30	5.6-7.3	0	0
		5-7	5.0-15	5.6-7.3	0	0
		7-18	15-30	5.6-7.3	0	0
		18-58	15-25	7.4-8.4	15-30	0
		58-80	10-30	7.4-8.4	15-30	0
Mustinka-----	5	0-9	28-40	6.6-7.8	0	0
		9-35	20-35	6.6-7.8	0	0
		35-62	10-18	7.4-8.4	10-30	0
		62-80	10-18	7.4-8.4	10-30	0
Wildwood-----	3	0-12	140-200	5.1-6.5	0	0
		12-33	30-60	5.6-7.3	0	0
		33-80	30-60	7.4-8.4	5-30	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
767:						
Mahkonce-----	2	0-3	10-25	5.6-7.3	0	0
		3-5	10-25	5.6-7.3	0	0
		5-16	25-30	6.1-7.3	0	0
		16-23	10-20	6.1-7.8	5-15	0
		23-80	10-20	7.4-8.4	15-30	0
794:						
Clearriver-----	85	0-2	4.0-13	5.1-6.5	0	0
		2-21	1.0-6.0	5.1-7.3	0	0
		21-80	1.0-3.0	6.6-7.8	1-10	0
Hiwood-----	7	0-3	1.0-7.0	4.5-6.0	0	0
		3-22	1.0-6.0	5.1-6.0	0	0
		22-80	1.0-6.0	5.6-7.8	0-15	0
Meehan-----	5	0-8	2.0-15	3.5-7.3	0	0
		8-31	1.0-8.0	3.5-6.5	0	0
		31-80	0.0-4.0	3.5-7.3	0	0
Faunce-----	3	0-2	2.0-10	5.1-6.5	0	0
		2-14	2.0-10	5.1-6.5	0	0
		14-24	2.0-10	5.1-7.3	0	0
		24-80	0.0-5.0	6.6-7.8	0-5	0
1002:						
Fluvaquents, frequently flooded--	90	0-12	10-35	5.6-7.8	0-15	0
		12-80	5.0-30	5.6-7.8	0-15	0
Seelyeville-----	6	0-18	140-200	4.5-7.3	0	0
		18-80	140-200	4.5-7.3	0	0
Hapludalfs-----	2	0-6	10-20	6.1-7.8	0-1	0
		6-8	5.0-15	6.1-7.8	0-1	0
		8-25	15-30	6.6-7.8	0-1	0
		25-80	5.0-25	7.4-8.4	5-30	0
Water-----	2	---	---	---	---	---
1030:						
Pits, gravel-----	75	---	---	---	---	---
Udipsamments-----	20	0-14	1.0-5.0	6.6-7.3	0	0
		14-60	1.0-3.0	6.6-7.3	0	0
		60-80	1.0-3.0	7.4-8.4	0-5	0
Corliss-----	2	0-8	3.0-12	6.1-7.8	0-15	0
		8-80	0.0-4.0	6.1-7.8	0-15	0
Karlstad-----	2	0-7	2.0-15	4.5-7.3	0	0
		7-10	2.0-15	6.1-7.3	0-15	0
		10-14	1.0-15	6.1-7.8	0-15	0
		14-80	0.0-1.0	7.4-8.4	5-30	0
Hangaard-----	1	0-12	10-26	6.6-7.8	0	0
		12-80	2.0-6.0	7.4-8.4	5-15	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1031:						
Seelyeville, ponded--	90	0-18	140-200	4.5-7.3	0	0
		18-80	140-200	4.5-7.3	0	0
Cathro-----	4	0-8	120-170	4.5-7.8	0	0
		8-40	120-170	4.5-7.8	0	0
		40-80	5.0-25	6.6-8.4	5-25	0
Dora-----	3	0-5	40-180	4.5-7.8	0	0
		5-31	40-180	4.5-7.8	0	0
		31-80	18-31	6.1-8.4	0-20	0
Markey-----	3	0-42	110-170	4.5-7.8	0-5	0
		42-80	1.0-3.0	5.6-8.4	0-5	0
1067:						
Fluvaquents, frequently flooded--	60	0-11	10-35	5.6-7.8	0-15	0
		11-80	5.0-30	5.6-7.8	0-15	0
Hapludalfs-----	30	0-6	10-20	6.1-7.8	0-1	0
		6-8	5.0-15	6.1-7.8	0-1	0
		8-25	15-30	6.6-7.8	0-1	0
		25-80	5.0-25	7.4-8.4	5-30	0
Seelyeville-----	5	0-18	140-200	4.5-7.3	0	0
		18-80	140-200	4.5-7.3	0	0
Water-----	5	---	---	---	---	---
1133B:						
Skime-----	85	0-6	5.0-10	6.1-7.3	0-5	0
		6-17	2.0-10	6.1-7.3	0-5	0
		17-22	5.0-15	6.1-7.3	0-5	0
		22-72	1.0-10	6.6-8.4	0-10	0
		72-80	1.0-15	6.6-8.4	5-15	0
Hiwood-----	10	0-3	1.0-7.0	4.5-6.0	0	0
		3-22	1.0-6.0	5.1-6.0	0	0
		22-80	1.0-6.0	5.6-7.8	0-15	0
Zippel-----	5	0-10	5.0-30	6.6-7.8	0-5	0
		10-16	3.0-15	6.6-7.8	0-15	0
		16-80	3.0-15	7.4-8.4	5-30	0
1134:						
Borup-----	55	0-9	15-30	7.4-8.4	10-25	0
		9-34	6.0-15	7.4-8.4	15-40	0
		34-80	3.0-10	7.4-8.4	10-30	0
Glyndon-----	35	0-7	12-24	7.4-9.0	15-25	0
		7-80	6.0-14	7.4-9.0	20-40	0
Augsburg, depressional-----	5	0-9	10-30	7.4-8.4	5-30	0
		9-16	1.0-15	7.4-8.4	25-40	0-3
		16-32	1.0-15	7.4-8.4	30-35	0-3
		32-80	20-50	7.4-8.4	10-30	0-3

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1134: Skime-----	5	0-6	5.0-10	6.1-7.3	0-5	0
		6-17	2.0-10	6.1-7.3	0-5	0
		17-22	5.0-15	6.1-7.3	0-5	0
		22-72	1.0-10	6.6-8.4	0-10	0
		72-80	1.0-15	6.6-8.4	5-15	0
1144: Strathcona, depressional-----	45	0-12	25-51	7.4-8.4	5-15	0
		12-18	5.0-15	7.4-8.4	15-30	0
		18-39	2.0-8.0	7.4-8.4	5-15	0
		39-80	10-20	7.4-8.4	20-45	0
Kratka, depressional-	45	0-9	6.0-30	6.6-7.8	0-10	0
		9-26	1.0-8.0	6.6-7.8	0-15	0
		26-80	4.0-21	6.1-8.4	0-30	0
Kratka-----	5	0-8	6.0-20	5.6-7.8	0-15	0
		8-22	1.0-8.0	5.6-7.8	0-15	0
		22-80	4.0-21	6.1-8.4	0-30	0
Northwood-----	5	0-11	100-170	5.1-7.8	0	0
		11-16	5.0-15	5.6-7.8	0-15	0
		16-25	1.0-10	5.6-8.4	5-30	0
		25-80	5.0-25	7.4-8.4	5-30	0
1154: Sax-----	90	0-15	120-170	5.1-6.5	0	0
		15-24	10-58	6.1-7.3	0-5	0
		24-39	10-30	6.1-7.3	0-5	0
		39-71	5.0-30	7.4-8.4	5-20	0
		71-80	15-50	7.4-8.4	5-15	0
Wabanica-----	5	0-8	15-25	6.6-7.8	5-15	0
		8-19	10-30	6.6-7.8	5-15	0
		19-80	10-30	7.4-8.4	10-30	0
Cathro-----	3	0-8	120-170	4.5-7.8	0	0
		8-40	120-170	4.5-7.8	0	0
		40-80	5.0-25	6.6-8.4	5-25	0
Woodslake-----	2	0-8	35-55	6.6-7.8	0	0
		8-15	42-62	6.6-8.4	0	0
		15-36	40-60	7.4-8.4	5-30	0
		36-80	18-36	7.4-8.4	5-30	0
1158: Skagen-----	85	0-9	15-30	7.4-7.8	2-20	0
		9-19	5.0-15	7.4-8.4	25-50	0
		19-80	5.0-15	7.4-8.4	20-45	0
Percy-----	10	0-10	13-33	6.6-8.4	0-20	0
		10-25	6.0-11	7.4-8.4	25-50	0
		25-80	5.0-10	7.4-8.4	20-45	0
Foxhome-----	5	0-10	10-24	6.6-7.8	0	0
		10-15	2.0-8.0	6.6-7.8	0-10	0
		15-23	2.0-10	7.4-8.4	5-15	0
		23-80	6.0-18	7.4-8.4	15-30	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1170:						
Skagen, very cobbly--	85	0-10	15-30	7.4-7.8	2-20	0
		10-28	5.0-15	7.4-8.4	25-50	0
		28-80	5.0-15	7.4-8.4	20-45	0
Percy, very cobbly---	10	0-8	13-33	6.6-8.4	0-20	0
		8-23	6.0-11	7.4-8.4	25-50	0
		23-80	5.0-10	7.4-8.4	20-45	0
Foxhome-----	5	0-10	10-24	6.6-7.8	0	0
		10-15	2.0-8.0	6.6-7.8	0-10	0
		15-23	2.0-10	7.4-8.4	5-15	0
		23-80	6.0-18	7.4-8.4	15-30	0
1179B:						
Moranville-----	85	0-8	1.0-10	6.6-7.8	0-10	0
		8-24	1.0-5.0	6.6-7.8	0-10	0
		24-42	15-35	6.6-7.8	0-15	0
		42-80	10-30	7.4-8.4	5-30	0
Baudette-----	5	0-8	5.0-22	5.6-7.3	0	0
		8-10	4.0-24	5.6-7.3	0	0
		10-30	12-30	5.6-7.8	0-5	0
		30-80	3.0-23	7.4-8.4	10-20	0
Hiwood-----	5	0-3	1.0-7.0	4.5-6.0	0	0
		3-22	1.0-6.0	5.1-6.0	0	0
		22-80	1.0-6.0	5.6-7.8	0-15	0
Spooner-----	5	0-6	4.0-19	5.6-7.8	0-15	0
		6-15	1.0-11	5.6-7.8	0-15	0
		15-22	11-21	6.1-7.8	0-15	0
		22-60	2.0-20	7.4-8.4	10-40	0
1181:						
Rosewood-----	50	0-8	8.0-24	7.4-8.4	5-20	0
		8-15	5.0-15	7.4-8.4	15-30	0
		15-80	1.0-4.0	7.4-8.4	5-25	0
Ulen-----	40	0-10	10-25	7.4-8.4	5-30	0
		10-18	0.0-10	7.9-8.4	5-30	0
		18-80	0.0-10	7.4-8.4	5-30	0
Redby-----	5	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
Deerwood-----	3	0-14	90-190	5.6-7.8	0-5	0
		14-16	8.0-30	6.1-8.4	0-15	0
		16-80	1.0-10	7.4-8.4	10-20	0
Syrene-----	2	0-11	10-25	7.4-8.4	5-30	0
		11-19	10-35	7.9-8.4	15-35	0
		19-80	1.0-10	7.4-8.4	10-30	0
1182:						
Warroad-----	85	0-11	5.0-25	6.6-7.8	0	0
		11-26	1.0-10	7.4-7.8	0	0
		26-80	10-30	7.4-8.4	5-30	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1182:						
Wabanica-----	7	0-8	15-25	6.6-7.8	5-15	0
		8-19	10-30	6.6-7.8	5-15	0
		19-80	10-30	7.4-8.4	10-30	0
Enstrom-----	5	0-6	3.0-15	6.6-7.8	0	0
		6-29	1.0-8.0	6.6-8.4	0-10	0
		29-80	5.0-18	7.4-8.4	10-40	---
Sax-----	3	0-15	120-170	5.1-6.5	0	0
		15-24	10-58	6.1-7.3	0-5	0
		24-39	10-30	6.1-7.3	0-5	0
		39-71	5.0-30	7.4-8.4	5-20	0
		71-80	15-50	7.4-8.4	5-15	0
1187:						
Dora, ponded-----	90	0-24	150-230	4.5-7.8	0	0
		24-30	125-200	4.5-7.8	0	0
		30-80	30-60	6.1-8.4	5-30	0
Seelyeville, ponded--	4	0-18	140-200	4.5-7.3	0	0
		18-80	140-200	4.5-7.3	0	0
Wildwood-----	4	0-12	140-200	5.1-6.5	0	0
		12-33	30-60	5.6-7.3	0	0
		33-80	30-60	7.4-8.4	5-30	0
Boash-----	2	0-9	20-32	6.6-7.8	0-10	0
		9-29	18-38	6.6-7.8	5-20	0
		29-80	8.0-18	7.4-8.4	10-30	0
1191:						
Sahkahtay-----	85	0-4	6.0-15	5.6-7.3	0	0
		4-8	2.0-8.0	5.6-7.3	0	0
		8-14	10-16	6.1-7.3	0	0
		14-80	1.0-4.0	7.4-8.4	5-15	0
Cormant-----	5	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
Deerwood-----	5	0-14	90-190	5.6-7.8	0-5	0
		14-16	8.0-30	6.1-8.4	0-15	0
		16-80	1.0-10	7.4-8.4	10-20	0
Karlstad-----	3	0-7	2.0-15	4.5-7.3	0	0
		7-10	2.0-15	6.1-7.3	0-15	0
		10-14	1.0-15	6.1-7.8	0-15	0
		14-80	0.0-1.0	7.4-8.4	5-30	0
Redby-----	2	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
1206:						
Cormant-----	55	0-7	5.0-26	6.1-7.3	0	0
		7-80	1.0-5.0	6.1-7.8	0-15	0
Redby-----	35	0-4	2.0-10	5.1-6.5	0	0
		4-30	1.0-5.0	5.1-6.5	0	0
		30-80	0.0-4.0	6.1-7.8	0-15	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1206:						
Hiwood-----	5	0-3	1.0-7.0	4.5-6.0	0	0
		3-22	1.0-6.0	5.1-6.0	0	0
		22-80	1.0-6.0	5.6-7.8	0-15	0
Leafriver-----	5	0-13	100-180	4.5-7.3	0	0
		13-80	1.0-15	4.5-7.3	0	0
1214:						
Mustinka-----	90	0-9	28-40	6.6-7.8	0	0
		9-35	20-35	6.6-7.8	0	0
		35-62	10-18	7.4-8.4	10-30	0
		62-80	10-18	7.4-8.4	10-30	0
Espelie-----	4	0-10	8.0-18	6.6-7.3	0	0
		10-27	2.0-8.0	6.6-7.8	0-15	0
		27-80	16-30	7.4-8.4	10-30	0-3
Wildwood-----	4	0-12	140-200	5.1-6.5	0	0
		12-33	30-60	5.6-7.3	0	0
		33-80	30-60	7.4-8.4	5-30	0
Dalbo-----	2	0-15	8.0-25	5.6-7.3	0	0
		15-23	14-40	5.1-7.3	0	0
		23-80	10-40	7.4-8.4	5-30	0
1274B:						
Redby-----	40	0-10	2.0-10	5.1-6.5	0	0
		10-35	1.0-5.0	5.1-6.5	0	0
		35-80	0.0-4.0	6.1-7.8	0-15	0
Hiwood-----	30	0-7	3.0-10	4.5-6.0	0	0
		7-32	1.0-6.0	5.1-6.0	0	0
		32-80	1.0-6.0	5.6-7.8	0-15	0
Leafriver, wooded----	15	0-10	100-180	4.5-7.3	0	0
		10-13	10-50	4.5-7.3	0	0
		13-80	1.0-15	4.5-7.3	0	0
Clearriver-----	5	0-2	4.0-13	5.1-6.5	0	0
		2-21	1.0-6.0	5.1-7.3	0	0
		21-80	1.0-3.0	6.6-7.8	1-10	0
Cormant-----	5	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
Zimmerman-----	5	0-6	2.0-5.0	5.1-6.5	0	0
		6-80	1.0-6.0	5.1-7.3	0	0
1298:						
Borup-----	90	0-8	15-30	7.4-8.4	10-25	0
		8-80	6.0-15	7.4-8.4	15-40	0
Augsburg, depressional-----	3	0-9	10-30	7.4-8.4	5-30	0
		9-16	1.0-15	7.4-8.4	25-40	0-3
		16-32	1.0-15	7.4-8.4	30-35	0-3
		32-80	20-50	7.4-8.4	10-30	0-3

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1298:						
Glyndon-----	3	0-7	12-24	7.4-9.0	15-25	0
		7-80	6.0-14	7.4-9.0	20-40	0
Sago-----	2	0-14	100-190	4.5-6.5	0	0
		14-80	4.0-20	5.6-8.4	0-20	0
Skime-----	2	0-6	5.0-10	6.1-7.3	0-5	0
		6-17	2.0-10	6.1-7.3	0-5	0
		17-22	5.0-15	6.1-7.3	0-5	0
		22-72	1.0-10	6.6-8.4	0-10	0
		72-80	1.0-15	6.6-8.4	5-15	0
1302:						
Foldahl-----	85	0-12	6.0-18	6.1-7.8	0	0
		12-30	2.0-8.0	6.6-7.8	0-10	0
		30-80	6.0-18	7.4-8.4	10-20	0
Kratka-----	10	0-8	6.0-20	5.6-7.8	0-15	0
		8-22	1.0-8.0	5.6-7.8	0-15	0
		22-80	4.0-21	6.1-8.4	0-30	0
Foxhome-----	5	0-10	10-24	6.6-7.8	0	0
		10-15	2.0-8.0	6.6-7.8	0-10	0
		15-23	2.0-10	7.4-8.4	5-15	0
		23-80	6.0-18	7.4-8.4	15-30	0
1304:						
Glyndon-----	85	0-11	12-24	7.4-9.0	15-25	0
		11-56	6.0-14	7.4-9.0	20-40	0
		56-80	2.0-10	7.4-9.0	15-35	0
Borup-----	10	0-8	15-30	7.4-8.4	10-25	0
		8-80	6.0-15	7.4-8.4	15-40	0
Skime-----	5	0-6	5.0-10	6.1-7.3	0-5	0
		6-17	2.0-10	6.1-7.3	0-5	0
		17-22	5.0-15	6.1-7.3	0-5	0
		22-72	1.0-10	6.6-8.4	0-10	0
		72-80	1.0-15	6.6-8.4	5-15	0
1305:						
Hilaire-----	85	0-13	8.0-18	6.6-7.3	0-10	0
		13-33	3.0-10	6.6-7.8	0-10	0
		33-80	16-30	7.4-8.4	10-30	0
Espelie-----	11	0-10	8.0-18	6.6-7.3	0	0
		10-27	2.0-8.0	6.6-7.8	0-15	0
		27-80	16-30	7.4-8.4	10-30	0-3
Grano-----	2	0-11	8.0-24	6.6-7.8	0-5	0
		11-41	18-36	7.4-8.4	5-25	0
		41-80	18-30	7.4-8.4	5-25	0
Redby-----	2	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1314:						
Tacoosh-----	90	0-17	150-200	5.6-7.8	0	0
		17-33	150-200	5.6-7.8	0	0
		33-80	10-30	6.6-8.4	0-30	0
Rifle-----	8	0-8	150-180	4.5-7.3	0	0
		8-80	50-150	4.5-7.3	0	0
Sax-----	2	0-15	120-170	5.1-6.5	0	0
		15-24	10-58	6.1-7.3	0-5	0
		24-39	10-30	6.1-7.3	0-5	0
		39-71	5.0-30	7.4-8.4	5-20	0
		71-80	15-50	7.4-8.4	5-15	0
1316:						
Wheatville-----	85	0-12	15-35	7.4-8.4	5-30	0
		12-35	5.0-15	7.4-8.4	15-40	0
		35-80	20-65	7.4-7.8	10-30	0
Augsburg-----	13	0-9	10-30	7.4-8.4	5-30	0
		9-33	1.0-15	7.4-8.4	25-40	0-3
		33-80	20-50	7.4-8.4	15-30	0-3
Grano-----	2	0-11	8.0-24	6.6-7.8	0-5	0
		11-41	18-36	7.4-8.4	5-25	0
		41-80	18-30	7.4-8.4	5-25	0
1326:						
Augsburg, depressional-----	45	0-9	10-30	7.4-8.4	5-30	0
		9-16	1.0-15	7.4-8.4	25-40	0-3
		16-32	1.0-15	7.4-8.4	30-35	0-3
		32-80	20-50	7.4-8.4	10-30	0-3
Wabanica, depressional-----	45	0-8	20-40	6.6-7.8	0-15	0
		8-26	15-40	7.4-8.4	5-30	0
		26-68	10-30	7.4-8.4	5-30	0
		68-80	20-50	7.4-8.4	5-30	0
Sax-----	6	0-15	120-170	5.1-6.5	0	0
		15-24	10-58	6.1-7.3	0-5	0
		24-39	10-30	6.1-7.3	0-5	0
		39-71	5.0-30	7.4-8.4	5-20	0
		71-80	15-50	7.4-8.4	5-15	0
Espelie-----	2	0-10	8.0-18	6.6-7.3	0	0
		10-27	2.0-8.0	6.6-7.8	0-15	0
		27-80	16-30	7.4-8.4	10-30	0-3
Zippel-----	2	0-10	5.0-30	6.6-7.8	0-5	0
		10-16	3.0-15	6.6-7.8	0-15	0
		16-80	3.0-15	7.4-8.4	5-30	0
1327B:						
Karlstad-----	65	0-11	2.0-15	4.5-7.3	0	0
		11-14	2.0-15	6.1-7.3	0-15	0
		14-16	1.0-15	6.1-7.8	0-15	0
		16-80	0.0-1.0	7.4-8.4	5-30	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1327B:						
Marquette-----	25	0-10	2.0-12	5.6-7.3	0	0
		10-18	3.0-12	6.6-8.4	0	0
		18-80	1.0-4.0	7.4-8.4	5-20	0
Sahkahtay-----	7	0-4	6.0-15	5.6-7.3	0	0
		4-8	2.0-8.0	5.6-7.3	0	0
		8-14	10-16	6.1-7.3	0	0
		14-80	1.0-4.0	7.4-8.4	5-15	0
Redby-----	3	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
1328:						
Northwood, wooded----	90	0-15	100-170	5.1-7.8	0	0
		15-21	5.0-15	5.6-7.8	0-15	0
		21-39	1.0-10	5.6-8.4	5-30	0
		39-80	5.0-25	7.4-8.4	5-30	0
Berner, wooded-----	5	0-20	115-160	5.6-7.3	0	0
		20-44	2.0-8.0	6.1-7.8	0-5	0
		44-80	10-20	7.4-8.4	15-35	0
Grygla-----	5	0-6	2.0-16	6.1-7.3	0	0
		6-26	1.0-8.0	6.6-7.8	0	0
		26-80	4.0-14	7.4-8.4	10-35	0
1333:						
Dora, wooded-----	90	0-8	40-180	4.5-7.8	0	0
		8-26	40-180	4.5-7.8	0	0
		26-80	18-31	6.1-8.4	0-20	0
Lupton-----	4	0-16	100-200	4.5-7.8	0	0
		16-80	100-200	4.5-7.8	0	0
Wildwood-----	4	0-12	140-200	5.1-6.5	0	0
		12-33	30-60	5.6-7.3	0	0
		33-80	30-60	7.4-8.4	5-30	0
Auganaush-----	2	0-5	15-30	5.6-7.3	0	0
		5-7	5.0-15	5.6-7.3	0	0
		7-18	15-30	5.6-7.3	0	0
		18-58	15-25	7.4-8.4	15-30	0
		58-80	10-30	7.4-8.4	15-30	0
1356:						
Water, miscellaneous.						
1399B:						
Two Inlets-----	85	0-2	2.0-10	6.6-7.3	0	0
		2-4	1.0-10	6.1-6.5	0	0
		4-17	3.0-15	6.1-6.5	0	0
		17-80	0.0-3.0	6.6-7.3	0	0
Wurtsmith-----	6	0-5	2.0-10	4.5-7.3	0	0
		5-45	0.0-7.0	4.5-6.5	0	0
		45-80	0.0-4.0	5.1-7.8	0	0
Zimmerman-----	6	0-6	2.0-5.0	5.1-6.5	0	0
		6-80	1.0-6.0	5.1-7.3	0	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1399B:						
Meehan-----	3	0-8	2.0-15	3.5-7.3	0	0
		8-31	1.0-8.0	3.5-6.5	0	0
		31-80	0.0-4.0	3.5-7.3	0	0
1401:						
Grygla, depressional-	90	0-5	2.0-28	6.1-7.3	0	0
		5-36	1.0-8.0	6.6-7.8	0	0
		36-80	4.0-14	7.4-8.4	10-35	0
Northwood, wooded----	5	0-15	100-170	5.1-7.8	0	0
		15-21	5.0-15	5.6-7.8	0-15	0
		21-39	1.0-10	5.6-8.4	5-30	0
		39-80	5.0-25	7.4-8.4	5-30	0
Chilgren-----	3	0-5	5.0-20	6.1-7.3	0	0
		5-9	2.0-20	6.1-7.3	0	0
		9-16	10-30	6.1-7.8	0-1	0
		16-80	5.0-25	7.4-8.4	10-30	0
Grygla-----	2	0-6	2.0-16	6.1-7.3	0	0
		6-26	1.0-8.0	6.6-7.8	0	0
		26-80	4.0-14	7.4-8.4	10-35	0
1402:						
Leafriver, wooded----	90	0-10	100-180	4.5-7.3	0	0
		10-13	10-50	4.5-7.3	0	0
		13-80	1.0-15	4.5-7.3	0	0
Cormant-----	4	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
Tawas-----	4	0-10	80-120	4.5-7.8	0-5	0
		10-27	80-120	4.5-7.8	0-5	0
		27-80	1.0-6.0	5.6-8.4	0-30	0
Redby-----	2	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0
1404:						
Berner, wooded-----	90	0-20	115-160	5.6-7.3	0	0
		20-44	2.0-8.0	6.1-7.8	0-5	0
		44-80	10-20	7.4-8.4	15-35	0
Lupton-----	4	0-16	100-200	4.5-7.8	0	0
		16-80	100-200	4.5-7.8	0	0
Northwood, wooded----	4	0-15	100-170	5.1-7.8	0	0
		15-21	5.0-15	5.6-7.8	0-15	0
		21-39	1.0-10	5.6-8.4	5-30	0
		39-80	5.0-25	7.4-8.4	5-30	0
Grygla-----	2	0-6	2.0-16	6.1-7.3	0	0
		6-26	1.0-8.0	6.6-7.8	0	0
		26-80	4.0-14	7.4-8.4	10-35	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1405:						
Lallie-----	90	0-8	21-51	7.4-8.4	0-10	0
		8-80	23-60	7.4-9.0	5-25	0
Sax-----	7	0-15	120-170	5.1-6.5	0	0
		15-24	10-58	6.1-7.3	0-5	0
		24-39	10-30	6.1-7.3	0-5	0
		39-71	5.0-30	7.4-8.4	5-20	0
		71-80	15-50	7.4-8.4	5-15	0
Wabanica-----	3	0-8	15-25	6.6-7.8	5-15	0
		8-19	10-30	6.6-7.8	5-15	0
		19-80	10-30	7.4-8.4	10-30	0
1414:						
Nereson, very cobbly-	85	0-7	10-14	6.1-7.3	0	0
		7-11	5.0-13	6.6-7.8	0-5	0
		11-29	3.0-12	7.4-8.4	15-30	0
		29-80	3.0-12	7.4-8.4	10-30	0
Percy, very cobbly---	10	0-8	13-33	6.6-8.4	0-20	0
		8-23	6.0-11	7.4-8.4	25-50	0
		23-80	5.0-10	7.4-8.4	20-45	0
Pelan-----	3	0-6	3.0-16	6.1-7.3	0	0
		6-12	7.0-15	6.1-7.8	0	0
		12-24	1.0-5.0	7.4-8.4	0-15	0
		24-60	4.0-10	7.4-8.4	15-40	0
Foxhome-----	2	0-10	10-24	6.6-7.8	0	0
		10-15	2.0-8.0	6.6-7.8	0-10	0
		15-23	2.0-10	7.4-8.4	5-15	0
		23-80	6.0-18	7.4-8.4	15-30	0
1428:						
Karlsruhe-----	85	0-8	11-22	6.6-8.4	5-30	0
		8-16	7.0-14	6.6-8.4	15-30	0
		16-80	0.0-3.0	7.4-8.4	10-25	0
Syrene-----	10	0-11	10-25	7.4-8.4	5-30	0
		11-19	10-35	7.9-8.4	15-35	0
		19-80	1.0-10	7.4-8.4	10-30	0
Ulen-----	5	0-10	10-25	7.4-8.4	5-30	0
		10-16	0.0-10	7.9-8.4	5-30	0
		16-67	0.0-10	7.4-8.4	5-30	0
		67-80	5.0-15	7.4-8.4	5-30	0
1444:						
Wurtsmith-----	85	0-5	2.0-10	4.5-7.3	0	0
		5-45	0.0-7.0	4.5-6.5	0	0
		45-80	0.0-4.0	5.1-7.8	0	0
Meehan-----	10	0-8	2.0-15	3.5-7.3	0	0
		8-31	1.0-8.0	3.5-6.5	0	0
		31-80	0.0-4.0	3.5-7.3	0	0
Clearriver-----	2	0-2	4.0-13	5.1-6.5	0	0
		2-21	1.0-6.0	5.1-7.3	0	0
		21-80	1.0-3.0	6.6-7.8	1-10	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1444:						
Two Inlets-----	2	0-2	2.0-10	6.6-7.3	0	0
		2-4	1.0-10	6.1-6.5	0	0
		4-17	3.0-15	6.1-6.5	0	0
		17-80	0.0-3.0	6.6-7.3	0	0
Cormant-----	1	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
1448:						
Grano-----	90	0-13	26-42	6.6-7.8	0-5	0
		13-54	18-36	7.4-8.4	5-25	0
		54-80	18-30	7.4-8.4	5-25	0
Percy-----	5	0-10	13-33	6.6-8.4	0-20	0
		10-25	6.0-11	7.4-8.4	25-50	0
		25-80	5.0-10	7.4-8.4	20-45	0
Augsburg-----	3	0-9	10-30	7.4-8.4	5-30	0
		9-33	1.0-15	7.4-8.4	25-40	0-3
		33-80	20-50	7.4-8.4	15-30	0-3
Woodslake-----	2	0-8	35-55	6.6-7.8	0	0
		8-15	42-62	6.6-8.4	0	0
		15-36	40-60	7.4-8.4	5-30	0
		36-80	18-36	7.4-8.4	5-30	0
1449:						
Grano-----	90	0-11	8.0-24	6.6-7.8	0-5	0
		11-41	18-36	7.4-8.4	5-25	0
		41-80	18-30	7.4-8.4	5-25	0
Percy-----	5	0-10	13-33	6.6-8.4	0-20	0
		10-25	6.0-11	7.4-8.4	25-50	0
		25-80	5.0-10	7.4-8.4	20-45	0
Augsburg-----	3	0-9	10-30	7.4-8.4	5-30	0
		9-33	1.0-15	7.4-8.4	25-40	0-3
		33-80	20-50	7.4-8.4	15-30	0-3
Woodslake-----	2	0-8	35-55	6.6-7.8	0	0
		8-15	42-62	6.6-8.4	0	0
		15-36	40-60	7.4-8.4	5-30	0
		36-80	18-36	7.4-8.4	5-30	0
1807:						
Cathro, ponded-----	90	0-19	150-230	4.5-7.8	0	0
		19-80	2.0-20	5.6-8.4	5-25	0
Haug-----	4	0-10	100-180	6.6-7.8	0-5	0
		10-16	14-26	6.6-8.4	5-30	0
		16-80	10-16	7.4-8.4	5-30	0
Seelyeville, ponded--	4	0-18	140-200	4.5-7.3	0	0
		18-80	140-200	4.5-7.3	0	0
Percy-----	2	0-8	13-33	6.6-8.4	0-20	0
		8-23	6.0-11	7.4-8.4	25-50	0
		23-80	5.0-10	7.4-8.4	20-45	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1808:						
Markey, ponded-----	90	0-17	110-170	4.5-7.8	0-5	0
		17-80	1.0-3.0	5.6-8.4	0-5	0
Leafriver-----	4	0-13	100-180	4.5-7.3	0	0
		13-80	1.0-15	4.5-7.3	0	0
Seelyeville, ponded--	4	0-18	140-200	4.5-7.3	0	0
		18-80	140-200	4.5-7.3	0	0
Cormant-----	2	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
1918:						
Croke-----	85	0-12	10-25	6.6-7.8	0-10	0
		12-21	5.0-15	6.6-8.4	0-15	0
		21-80	20-50	7.9-8.4	10-30	0
Augsburg-----	13	0-9	10-30	7.4-8.4	5-30	0
		9-33	1.0-15	7.4-8.4	25-40	0-3
		33-80	20-50	7.4-8.4	15-30	0-3
Grano-----	2	0-11	8.0-24	6.6-7.8	0-5	0
		11-41	18-36	7.4-8.4	5-25	0
		41-80	18-30	7.4-8.4	5-25	0
1923B:						
Garnes, very stony---	85	0-6	4.0-18	6.1-7.8	0	0
		6-13	10-18	6.6-7.8	0	0
		13-80	5.0-14	7.4-8.4	10-40	0
Chilgren-----	10	0-5	5.0-20	6.1-7.3	0	0
		5-9	2.0-20	6.1-7.3	0	0
		9-16	10-30	6.1-7.8	0-1	0
		16-80	5.0-25	7.4-8.4	10-30	0
Eckvoll-----	3	0-6	3.0-14	6.1-7.3	0	0
		6-21	1.0-7.0	6.1-7.3	0	0
		21-26	8.0-18	6.6-7.8	0	0
		26-80	6.0-16	7.4-8.4	10-30	0
Pelan-----	2	0-6	3.0-16	6.1-7.3	0	0
		6-12	7.0-15	6.1-7.8	0	0
		12-24	1.0-5.0	7.4-8.4	0-15	0
		24-60	4.0-10	7.4-8.4	15-40	0
1984:						
Leafriver-----	90	0-13	100-180	4.5-7.3	0	0
		13-80	1.0-15	4.5-7.3	0	0
Cormant-----	5	0-6	5.0-26	6.1-7.3	0	0
		6-80	1.0-5.0	6.1-7.8	0-15	0
Markey-----	3	0-42	110-170	4.5-7.8	0-5	0
		42-80	1.0-3.0	5.6-8.4	0-5	0
Redby-----	2	0-3	2.0-10	5.1-6.5	0	0
		3-28	1.0-5.0	5.1-6.5	0	0
		28-80	0.0-4.0	6.1-7.8	0-15	0

Table 25.--Chemical Properties of the Soils--Continued

Map symbol and component name	Percent of map unit	Depth	Cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
W: Water.						

Table 26.--Soil Moisture Status by Depth

(Depths of layers are in feet.)

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
47:													
Colvin-----	C/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Bearden-----	C	0.0-4.1: Moist 4.1-6.7: Wet	0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.8: Moist 5.7-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-2.8: Moist 2.8-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-6.7: Moist 6.7: Wet*	0.0-4.6: Moist 4.6-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet
Grano-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Sax-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
48B:													
Hiwood-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Redby-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
Clearriver-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0: Dry* 0.0-4.4: Moist 4.4-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist ---	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
48B: Cormant-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Zimmerman-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.2: Dry 0.2-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.7: Dry 0.7-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
52: Augsburg-----	B/D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-2.3: Moist 2.3-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet
Croke-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0: Dry* 0.0-6.7: Moist 6.7: Wet*	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Grano-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Sago-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
59: Grimstad-----	B	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-0.2: Dry 0.2-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist ---	0.0: Dry* 0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---

See footnote at end of table.

Table 26.---Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
59: Strathcona-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Foxhome-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.6: Moist 3.6-6.7: Wet	0.0-0.2: Dry 0.2-5.4: Moist 5.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
64: Ulen-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.0: Moist 2.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0: Dry* 0.0-3.0: Moist 3.0-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
Rosewood-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Redby-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
Rushlake-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0: Dry* 0.0-4.4: Moist 4.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.3: Dry 0.3-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
65: Foxhome-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.6: Moist 3.6-6.7: Wet	0.0-0.2: Dry 0.2-5.4: Moist 5.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
Strandquist----	B/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Skagen-----	C	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.9: Moist 5.9-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.1: Moist 3.1-6.7: Wet	0.0-0.2: Dry 0.2-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-4.3: Moist 4.3-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
67: Bearden-----	C	0.0-4.1: Moist 4.1-6.7: Wet	0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.8: Moist 5.7-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-2.8: Moist 2.8-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-6.7: Moist 6.7: Wet*	0.0-4.6: Moist 4.6-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet
Colvin-----	C/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
77: Garnes-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.9: Moist 5.9-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.1: Moist 3.1-6.7: Wet	0.0-0.2: Dry 0.2-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-4.3: Moist 4.3-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
Chilgren-----	C	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
77: Eckvoll-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.1: Moist 3.1-6.7: Wet ---	0.0-0.1: Dry 0.1-3.8: Moist 3.8-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Pelan-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.6: Moist 3.6-6.7: Wet	0.0-0.2: Dry 0.2-5.4: Moist 5.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
111: Hangaard-----	A/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-0.3: Moist 0.3-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Deerwood-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Rushlake-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0: Dry* 0.0-4.4: Moist 4.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.3: Dry 0.3-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Rosewood-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
116: Redby-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
Cormant-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Hiwood-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Leafriver-----	A/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
117: Cormant-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Leafriver-----	A/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Epoufette-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-0.3: Moist 0.3-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
117: Redby-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
Grygla, depressional---	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
133: Dalbo-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0: Dry* 0.0-6.7: Moist 6.7: Wet*	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---
Mustinka-----	C/D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Moranville-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.1: Moist 3.1-6.7: Wet ---	0.0-0.1: Dry 0.1-3.8: Moist 3.8-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
145: Enstrom-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.1: Moist 3.1-6.7: Wet ---	0.0-0.1: Dry 0.1-3.8: Moist 3.8-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Grygla-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
145: Redby-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
Pelan-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.6: Moist 3.6-6.7: Wet	0.0-0.2: Dry 0.2-5.4: Moist 5.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
147: Spoonier-----	C/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Baudette-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.6: Moist 3.6-6.7: Wet ---	0.0-0.1: Dry 0.1-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Grygla-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Sago-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
158B: Zimmerman-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.2: Dry 0.2-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.7: Dry 0.7-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---

See footnote at end of table.

Table 26---Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
158B: Hiwood-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Two Inlets-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.2: Dry 0.2-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.7: Dry 0.7-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
Redby-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
167B: Baudette-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.6: Moist 3.6-6.7: Wet ---	0.0-0.1: Dry 0.1-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Spooner-----	C/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Moranville-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.1: Moist 3.1-6.7: Wet ---	0.0-0.1: Dry 0.1-3.8: Moist 3.8-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
187: Haug-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
187:													
Percy-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Cathro-----	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Boash-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
191:													
Epoufette-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-0.3: Moist 0.3-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Cormant-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Leafriver-----	A/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Meehan-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
202:													
Meehan-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
Cormant-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Wurtsmith-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.3: Dry 0.3-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Leafriver-----	A/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
205:													
Karlstad-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0: Dry* 0.0-4.4: Moist 4.4-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist ---	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Sahkahtay-----	B	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-0.3: Moist 0.3-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Marquette-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0: Dry* 0.0-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0-0.7: Dry 0.7-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0: Dry* 0.0-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist Moist

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
205: Redby-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
Pits, gravel.													
242B: Marquette-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0: Dry* 0.0-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0-0.7: Dry 0.7-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0: Dry* 0.0-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist 0.0-6.7: Moist
Karlstad-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0: Dry* 0.0-4.4: Moist 4.4-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist ---	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Pits, gravel.													
280: Pelan-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.6: Moist 3.6-6.7: Wet	0.0-0.2: Dry 0.2-5.4: Moist 5.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
Strandquist----	B/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Garnes-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.9: Moist 5.9-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.1: Moist 3.1-6.7: Wet	0.0-0.2: Dry 0.2-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-4.3: Moist 4.3-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---

See footnote at end of table.

Table 26.---Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
280: Marquette-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0: Dry* 0.0-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0-0.7: Dry 0.7-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0: Dry* 0.0-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist 0.0-6.7: Moist
Pits, gravel.													
379: Percy, very cobbly-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Boash-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Strandquist----	B/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Haug-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Skagen, very cobbly-----	C	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.9: Moist 5.9-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.1: Moist 3.1-6.7: Wet	0.0-0.2: Dry 0.2-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-4.3: Moist 4.3-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
383: Percy-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
383: Boash-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Strandquist----	B/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Haug-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Skagen-----	C	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.9: Moist 5.9-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.1: Moist 3.1-6.7: Wet	0.0-0.2: Dry 0.2-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-4.3: Moist 4.3-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
384: Percy, depressional---	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Haug-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Percy-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Boash-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
387: Roliss, depressional---	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Haug-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Roliss-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
404: Chilgren-----	C	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Garnes-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.9: Moist 5.9-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.1: Moist 3.1-6.7: Wet	0.0-0.2: Dry 0.2-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-4.3: Moist 4.3-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
Grygla-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Haug-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
412: Mavie-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
412: Foxhome-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.6: Moist 3.6-6.7: Wet	0.0-0.2: Dry 0.2-5.4: Moist 5.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
Northwood-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Percy, very cobbly-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
432: Strandquist-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Percy, very cobbly-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Haug-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Boash-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet

See footnote at end of table.

Table 26.---Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
432: Foxhome-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.6: Moist 3.6-6.7: Wet	0.0-0.2: Dry 0.2-5.4: Moist 5.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
433: Syrene, depressional---	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Deerwood-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Rosewood-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Syrene-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-0.3: Moist 0.3-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
435: Syrene-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-0.3: Moist 0.3-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
435: Rosewood-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Syrene, depressional---	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Karlsruhe-----	A	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.0: Moist 2.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.6: Moist 3.6-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-4.3: Moist 4.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
Deerwood-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
439: Strathcona-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Northwood-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Percy-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
439: Grimstad-----	B	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-0.2: Dry 0.2-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist ---	0.0: Dry* 0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---
Strandquist----	B/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
481: Kratka-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Northwood-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Percy-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Enstrom-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.1: Moist 3.1-6.7: Wet ---	0.0-0.1: Dry 0.1-3.8: Moist 3.8-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Strandquist----	B/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
482:													
Grygla-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Chilgren-----	C	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Grygla, depressional---	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Enstrom-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.1: Moist 3.1-6.7: Wet ---	0.0-0.1: Dry 0.1-3.8: Moist 3.8-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Northwood-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
532:													
Sago-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Cathro-----	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Zippel-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
534:													
Mooselake-----	A/D	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Bullwinkle-----	D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Dora-----	B/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Tawas-----	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
540:													
Seelyeville-----	A/D	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Cathro-----	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Dora-----	B/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Markey-----	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
541: Rifle-----	A/D	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Tacoosh-----	B/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
543: Markey-----	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Cormant-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Seelyeville----	A/D	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
544: Cathro-----	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Percy, very cobbly-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Grygla-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
544: Seelyeville-----	A/D	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
546: Lupton-----	A/D	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Bullwinkle-----	D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Dora-----	B/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Tawas-----	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
547: Deerwood-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Markey-----	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Rosewood-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* Moist 3.3-6.7: Wet	0.0: Dry* Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
547: Syrene-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-0.3: Moist 0.3-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
550: Dora-----	B/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Boash-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Seelyeville----	A/D	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Woodslake-----	D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
561: Bullwinkle-----	D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Lupton-----	A/D	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Northwood, wooded-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
561: Chilgren-----	C	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
563: Northwood-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Grygla-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Berner-----	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Strandquist----	B/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
565: Eckvoll-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.1: Moist 3.1-6.7: Wet ---	0.0-0.1: Dry 0.1-3.8: Moist 3.8-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Chilgren-----	C	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Grygla-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
565: Hiwood-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
568: Zippel-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Augsburg, depressional---	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Sago-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Skime-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
569: Wabanica-----	C	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Warroad-----	C	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
569:													
Sax-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Grano-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Enstrom-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.1: Moist 3.1-6.7: Wet ---	0.0-0.1: Dry 0.1-3.8: Moist 3.8-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
570:													
Faunce-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.2: Dry 0.2-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.7: Dry 0.7-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
Clearriver-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0: Dry* 0.0-4.4: Moist 4.4-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Zimmerman-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.2: Dry 0.2-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.7: Dry 0.7-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
Meehan-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
Pits, gravel.													

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
581:													
Percy-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Haug-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Boash-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Skagen-----	C	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.9: Moist 5.9-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.1: Moist 3.1-6.7: Wet	0.0-0.2: Dry 0.2-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-4.3: Moist 4.3-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
582:													
Roliss-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Roliss, depressional---	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Boash-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Haug-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
583:													
Nereson-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.9: Moist 5.9-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.1: Moist 3.1-6.7: Wet	0.0-0.2: Dry 0.2-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-4.3: Moist 4.3-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
Percy-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Pelan-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.6: Moist 3.6-6.7: Wet	0.0-0.2: Dry 0.2-5.4: Moist 5.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
Foxhome-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.6: Moist 3.6-6.7: Wet	0.0-0.2: Dry 0.2-5.4: Moist 5.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
627:													
Tawas-----	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Leafriver-----	A/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Lupton-----	A/D	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
627: Cormant-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
630: Wildwood-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Boash-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Dora-----	B/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Espelie-----	B/D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-2.3: Moist 2.3-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet
643: Huot-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-0.2: Dry 0.2-4.6: Moist 4.6-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Thiefriver-----	B/D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-2.3: Moist 2.3-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
643: Redby-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
644: Boash-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Percy-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Woodslake-----	D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Strandquist-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
645: Espelie-----	B/D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-2.3: Moist 2.3-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet
Grano-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
645: Hilaire-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-0.2: Dry 0.2-4.6: Moist 4.6-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Wildwood-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
651: Thiefriver-----	B/D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-2.3: Moist 2.3-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet
Grano-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Huot-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-0.2: Dry 0.2-4.6: Moist 4.6-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Wildwood-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
708: Rushlake-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0: Dry* 0.0-4.4: Moist 4.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.3: Dry 0.3-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---

See footnote at end of table.

Table 26.---Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
708:													
Corliss-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0: Dry* 0.0-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0-0.7: Dry 0.7-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0: Dry* 0.0-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---
Redby-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
Hangaard-----	A/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-0.3: Moist 0.3-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Pits, gravel.													
712:													
Rosewood-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Deerwood-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Hangaard-----	A/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-0.3: Moist 0.3-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
712: Ulen-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.0: Moist 2.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0: Dry* 0.0-3.0: Moist 3.0-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
721B: Corliss-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0: Dry* 0.0-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0-0.7: Dry 0.7-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0: Dry* 0.0-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---
Rushlake-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0: Dry* 0.0-4.4: Moist 4.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.3: Dry 0.3-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Hangaard-----	A/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-0.3: Moist 0.3-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Pits, gravel.													
733: Berner-----	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Grygla-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Seelyeville----	A/D	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
737: Mahkonce-----	C	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.9: Moist 5.9-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.1: Moist 3.1-6.7: Wet	0.0-0.2: Dry 0.2-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-4.3: Moist 4.3-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
Auganaush-----	C	0.0-2.5: Moist 2.5-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet
Eckvoll-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.1: Moist 3.1-6.7: Wet ---	0.0-0.1: Dry 0.1-3.8: Moist 3.8-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
755: Woodslake-----	D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Boash-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Wildwood-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Dora-----	B/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
767:													
Auganaush-----	C	0.0-2.5: Moist 2.5-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet
Mustinka-----	C/D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Wildwood-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Mahkonce-----	C	0.0-5.4: Moist 5.4-6.7: Wet --- ---	0.0-5.9: Moist 5.9-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.1: Moist 3.1-6.7: Wet	0.0-0.2: Dry 0.2-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-4.3: Moist 4.3-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
794:													
Clearriver-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0: Dry* 0.0-4.4: Moist 4.4-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist ---	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Hiwood-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Meehan-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
794: Faunce-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.2: Dry 0.2-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.7: Dry 0.7-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
1002: Fluvaquents, frequently flooded-----	D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Seelyeville----	D	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet
Hapludalfs-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0-3.1: Moist 3.1-6.7: Wet ---	0.0-0.1: Dry 0.1-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Water.													
1030: Pits, gravel.													
Udipsamments----	A	---	---	---	---	---	---	---	---	---	---	---	---
Corliss-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0: Dry* 0.0-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0-0.7: Dry 0.7-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0: Dry* 0.0-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---
Karlstad-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0: Dry* 0.0-4.4: Moist 4.4-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1030: Hangaard-----	A/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-0.3: Moist 0.3-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
1031: Seelyeville, ponded-----	D	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet
Cathro-----	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Dora-----	B/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Markey-----	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
1067: Fluvaquents, frequently flooded-----	D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Hapludalfs-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0-3.1: Moist 3.1-6.7: Wet ---	0.0-0.1: Dry 0.1-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Seelyeville-----	D	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1067: Water.													
1133B: Skime-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Hiwood-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Zippel-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
1134: Borup-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Glyndon-----	B	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.0: Moist 2.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0: Dry* 0.0-5.2: Moist 5.2-6.7: Wet	0.0: Dry* 0.0-6.7: Moist 6.7: Wet*	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Augsburg, depressional---	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
1134: Skime-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
1144: Strathcona, depressional---	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Kratka, depressional---	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Kratka-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Northwood-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
1154: Sax-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Wabanica-----	C	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Cathro-----	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
1154: Woodslake-----	D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
1158: Skagen-----	C	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.9: Moist 5.9-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.1: Moist 3.1-6.7: Wet	0.0-0.2: Dry 0.2-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: ---	0.0-4.3: Moist 4.3-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
Percy-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Foxhome-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.6: Moist 3.6-6.7: Wet	0.0-0.2: Dry 0.2-5.4: Moist 5.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
1170: Skagen, very cobbly-----	C	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.9: Moist 5.9-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.1: Moist 3.1-6.7: Wet	0.0-0.2: Dry 0.2-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: ---	0.0-4.3: Moist 4.3-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
Percy, very cobbly-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Foxhome-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.6: Moist 3.6-6.7: Wet	0.0-0.2: Dry 0.2-5.4: Moist 5.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1179B: Moranville-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.1: Moist 3.1-6.7: Wet ---	0.0-0.1: Dry 0.1-3.8: Moist 3.8-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Baudette-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.6: Moist 3.6-6.7: Wet ---	0.0-0.1: Dry 0.1-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Hiwood-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Spooner-----	C/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
1181: Rosewood-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Ulen-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.0: Moist 2.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0: Dry* 0.0-3.0: Moist 3.0-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
1181: Redby-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
Deerwood-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Syrene-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-0.3: Moist 0.3-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
1182: Warroad-----	C	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Wabanica-----	C	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Enstrom-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.1: Moist 3.1-6.7: Wet ---	0.0-0.1: Dry 0.1-3.8: Moist 3.8-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Sax-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
1187: Dora, ponded----	D	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1187: Seelyeville, ponded-----	D	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet
Wildwood-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Boash-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
1191: Sahkahtay-----	B	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-0.3: Moist 0.3-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Cormant-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Deerwood-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Karlstad-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0: Dry* 0.0-4.4: Moist 4.4-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist ---	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---

See footnote at end of table.

Table 26.---Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
1191: Redby-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
1206: Cormant-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Redby-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
Hiwood-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Leafriver-----	A/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
1214: Mustinka-----	C/D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Espelie-----	B/D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-2.3: Moist 2.3-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
1214: Wildwood-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Dalbo-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0: Dry* 0.0-6.7: Moist 6.7: Wet*	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---
1274B: Redby-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
Hiwood-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Leafriver, wooded-----	A/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Clearriver-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0: Dry* 0.0-4.4: Moist 4.4-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist ---	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Cormant-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
1274B: Zimmerman-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.2: Dry 0.2-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.7: Dry 0.7-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
1298: Borup-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Augsburg, depressional---	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Glyndon-----	B	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.0: Moist 2.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0: Dry* 0.0-5.2: Moist 5.2-6.7: Wet	0.0: Dry* 0.0-6.7: Moist 6.7: Wet*	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Sago-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Skime-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
1302: Foldahl-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.1: Moist 3.1-6.7: Wet ---	0.0: Dry* 0.0-3.8: Moist 3.8-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
1302: Kratka-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Foxhome-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.6: Moist 3.6-6.7: Wet	0.0-0.2: Dry 0.2-5.4: Moist 5.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
1304: Glyndon-----	B	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0: Dry* 0.0-5.2: Moist 5.2-6.7: Wet	0.0: Dry* 0.0-6.7: Moist 6.7: Wet*	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Borup-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Skime-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
1305: Hilaire-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-0.2: Dry 0.2-4.6: Moist 4.6-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Espelie-----	B/D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-2.3: Moist 2.3-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
1305: Grano-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Redby-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
1314: Tacoosh-----	B/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Rifle-----	A/D	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Sax-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
1316: Wheatville-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0: Dry* 0.0-6.7: Moist 6.7: Wet*	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Augsburg-----	B/D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-2.3: Moist 2.3-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet
Grano-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1326: Augsburg, depressional---	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Wabanica, depressional---	C	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Sax-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Espelie-----	B/D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-2.3: Moist 2.3-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet
Zippel-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
1327B: Karlstad-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0: Dry* 0.0-4.4: Moist 4.4-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Marquette-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0: Dry* 0.0-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0-0.7: Dry 0.7-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0: Dry* 0.0-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
1327B: Sahkahtay-----	B	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-0.3: Moist 0.3-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Redby-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
1328: Northwood, wooded-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Berner, wooded--	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Grygla-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
1333: Dora, wooded----	B/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Lupton-----	A/D	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Wildwood-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
1333: Auganaush-----	C	0.0-2.5: Moist 2.5-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet
1356: Water, miscellaneous.													
1399B: Two Inlets-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.2: Dry 0.2-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.7: Dry 0.7-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
Wurtsmith-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.3: Dry 0.3-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Zimmerman-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.2: Dry 0.2-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.7: Dry 0.7-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
Meehan-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
1401: Grygla, depressional---	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Northwood, wooded-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
1401: Chilgren-----	C	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Grygla-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
1402: Leafriver, wooded-----	A/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Cormant-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Tawas-----	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Redby-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 4.9-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
1404: Bernier, wooded--	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Lupton-----	A/D	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1404: Northwood, wooded-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Grygla-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
1405: Lallie-----	D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Sax-----	D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Wabanica-----	C	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
1414: Nereson, very cobble-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.9: Moist 5.9-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.1: Moist 3.1-6.7: Wet	0.0-0.2: Dry 0.2-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-4.3: Moist 4.3-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
Percy, very cobble-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
1414: Pelan-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.6: Moist 3.6-6.7: Wet	0.0-0.2: Dry 0.2-5.4: Moist 5.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
Foxhome-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.6: Moist 3.6-6.7: Wet	0.0-0.2: Dry 0.2-5.4: Moist 5.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
1428: Karlsruhe-----	A	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.0: Moist 2.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.6: Moist 3.6-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-4.3: Moist 4.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
Syrene-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-0.3: Moist 0.3-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Ulen-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.0: Moist 2.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0: Dry* 0.0-3.0: Moist 3.0-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
1444: Wurtsmith-----	A	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.5: Dry 0.5-6.7: Moist ---	0.0-0.3: Dry 0.3-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
1444: Meehan-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
Clearriver-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-6.2: Moist 6.2-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0: Dry* 0.0-4.4: Moist 4.4-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist ---	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---
Two Inlets-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.2: Dry 0.2-6.7: Moist	0.0-0.3: Dry 0.3-6.7: Moist	0.0-0.7: Dry 0.7-6.7: Moist	0.0-0.5: Dry 0.5-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
Cormant-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
1448: Grano-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Percy-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Augsburg-----	B/D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-2.3: Moist 2.3-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet
Woodslake-----	D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
1449: Grano-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
Percy-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
Augsburg-----	B/D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-2.3: Moist 2.3-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet
Woodslake-----	D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
1807: Cathro, ponded--	D	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet
Haug-----	B/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Seelyeville, ponded-----	D	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet
Percy-----	B/D	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet
1808: Markey, ponded--	A/D	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet
Leafriver-----	A/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet

See footnote at end of table.

Table 26.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
1808: Seelyeville, ponded-----	D	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet
Cormant-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
1918: Croke-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0: Dry* 0.0-6.7: Moist 6.7: Wet*	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Augsburg-----	B/D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-2.3: Moist 2.3-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet
Grano-----	D	0.0-2.1: Moist 2.1-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet
1923B: Garnes, very stony-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.9: Moist 5.9-6.7: Wet ---	0.0-4.9: Moist 4.9-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-2.8: Moist 2.8-6.7: Wet ---	0.0: Dry* 0.0-3.1: Moist 3.1-6.7: Wet	0.0-0.2: Dry 0.2-5.7: Moist 5.7-6.7: Wet	0.0-0.2: Dry 0.2-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-4.3: Moist 4.3-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
Chilgren-----	C	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet

See footnote at end of table.

Table 26.---Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro- logic group	January	February	March	April	May	June	July	August	September	October	November	December
1923B: Eckvoll-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.1: Moist 3.1-6.7: Wet ---	0.0-0.1: Dry 0.1-3.8: Moist 3.8-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.1: Moist 4.1-6.7: Wet	0.0-3.8: Moist 3.8-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---
Pelan-----	B	0.0-5.4: Moist 5.4-6.7: Wet ---	0.0-5.7: Moist 5.7-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0: Dry* 0.0-3.6: Moist 3.6-6.7: Wet	0.0-0.2: Dry 0.2-5.4: Moist 5.4-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist 6.7: Wet*	0.0: Dry* 0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.6: Moist 4.6-6.7: Wet ---
1984: Leafriver-----	A/D	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Cormant-----	A/D	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet ---	0.0-1.3: Moist 1.3-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0: Dry* 0.0-3.3: Moist 3.3-6.7: Wet	0.0: Dry* 0.0-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---	0.0-1.6: Moist 1.6-6.7: Wet ---	0.0-2.1: Moist 2.1-6.7: Wet ---
Markey-----	A/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-2.1: Moist 2.1-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0: Moist* 0.0-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.1: Moist 1.1-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.3: Moist 0.3-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet
Redby-----	B	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-4.1: Moist 4.1-6.7: Wet ---	0.0-3.3: Moist 3.3-6.7: Wet ---	0.0-1.5: Moist 1.5-6.7: Wet ---	0.0-1.8: Moist 1.8-6.7: Wet ---	0.0: Dry* 0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-0.3: Dry 0.3-6.7: Moist ---	0.0-0.2: Dry 0.2-4.9: Moist 4.9-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet ---	0.0-2.5: Moist 2.5-6.7: Wet ---	0.0-3.0: Moist 3.0-6.7: Wet ---
W: Water.													

* The given moisture status is transitory at about the indicated depth.

Table 27.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
111:												
Hangaard-----	None	None	None	None	None	None	None	None	None	None	None	None
Deerwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Rushlake-----	None	None	None	None	None	None	None	None	None	None	None	None
Rosewood-----	None	None	None	None	None	None	None	None	None	None	None	None
116:												
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
Cormant-----	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Leafriver-----	None	None	None	None	None	None	None	None	None	None	None	None
117:												
Cormant-----	None	None	None	None	None	None	None	None	None	None	None	None
Leafriver-----	None	None	None	None	None	None	None	None	None	None	None	None
Epoufette-----	None	None	None	None	None	None	None	None	None	None	None	None
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
Grygla, depressional---	None	None	None	None	None	None	None	None	None	None	None	None
133:												
Dalbo-----	None	None	None	None	None	None	None	None	None	None	None	None
Mustinka-----	None	None	None	None	None	None	None	None	None	None	None	None
Moranville-----	None	None	None	None	None	None	None	None	None	None	None	None
145:												
Enstrom-----	None	None	None	None	None	None	None	None	None	None	None	None
Grygla-----	None	None	None	None	None	None	None	None	None	None	None	None
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
Pelan-----	None	None	None	None	None	None	None	None	None	None	None	None
147:												
Spooner-----	None	None	None	None	None	None	None	None	None	None	None	None
Baudette-----	None	None	None	None	None	None	None	None	None	None	None	None
Grygla-----	None	None	None	None	None	None	None	None	None	None	None	None
Sago-----	None	None	None	None	None	None	None	None	None	None	None	None
158B:												
Zimmerman-----	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets-----	None	None	None	None	None	None	None	None	None	None	None	None
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
167B:												
Baudette-----	None	None	None	None	None	None	None	None	None	None	None	None
Spooner-----	None	None	None	None	None	None	None	None	None	None	None	None
Moranville-----	None	None	None	None	None	None	None	None	None	None	None	None

Table 27.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
435:												
Syrene-----	None	None	None	None	None	None	None	None	None	None	None	None
Rosewood-----	None	None	None	None	None	None	None	None	None	None	None	None
Syrene, depressional---	None	None	None	None	None	None	None	None	None	None	None	None
Karlsruhe-----	None	None	None	None	None	None	None	None	None	None	None	None
Deerwood-----	None	None	None	None	None	None	None	None	None	None	None	None
439:												
Strathcona-----	None	None	None	None	None	None	None	None	None	None	None	None
Northwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Percy-----	None	None	None	None	None	None	None	None	None	None	None	None
Grimstad-----	None	None	None	None	None	None	None	None	None	None	None	None
Strandquist-----	None	None	None	None	None	None	None	None	None	None	None	None
481:												
Kratka-----	None	None	None	None	None	None	None	None	None	None	None	None
Northwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Percy-----	None	None	None	None	None	None	None	None	None	None	None	None
Enstrom-----	None	None	None	None	None	None	None	None	None	None	None	None
Strandquist-----	None	None	None	None	None	None	None	None	None	None	None	None
482:												
Grygla-----	None	None	None	None	None	None	None	None	None	None	None	None
Chilgren-----	None	None	None	None	None	None	None	None	None	None	None	None
Grygla, depressional---	None	None	None	None	None	None	None	None	None	None	None	None
Enstrom-----	None	None	None	None	None	None	None	None	None	None	None	None
Northwood-----	None	None	None	None	None	None	None	None	None	None	None	None
532:												
Sago-----	None	None	None	None	None	None	None	None	None	None	None	None
Cathro-----	None	None	None	None	None	None	None	None	None	None	None	None
Zippel-----	None	None	None	None	None	None	None	None	None	None	None	None
534:												
Mooselake-----	None	None	None	None	None	None	None	None	None	None	None	None
Bullwinkle-----	None	None	None	None	None	None	None	None	None	None	None	None
Dora-----	None	None	None	None	None	None	None	None	None	None	None	None
Tawas-----	None	None	None	None	None	None	None	None	None	None	None	None
540:												
Seelyeville-----	None	None	None	None	None	None	None	None	None	None	None	None
Cathro-----	None	None	None	None	None	None	None	None	None	None	None	None
Dora-----	None	None	None	None	None	None	None	None	None	None	None	None
Markey-----	None	None	None	None	None	None	None	None	None	None	None	None

Table 27.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
541:												
Rifle-----	None	None	None	None	None	None	None	None	None	None	None	None
Tacoosh-----	None	None	None	None	None	None	None	None	None	None	None	None
543:												
Markey-----	None	None	None	None	None	None	None	None	None	None	None	None
Cormant-----	None	None	None	None	None	None	None	None	None	None	None	None
Seelyeville-----	None	None	None	None	None	None	None	None	None	None	None	None
544:												
Cathro-----	None	None	None	None	None	None	None	None	None	None	None	None
Percy, very cobbly-----	None	None	None	None	None	None	None	None	None	None	None	None
Grygla-----	None	None	None	None	None	None	None	None	None	None	None	None
Seelyeville-----	None	None	None	None	None	None	None	None	None	None	None	None
546:												
Lupton-----	None	None	None	None	None	None	None	None	None	None	None	None
Bullwinkle-----	None	None	None	None	None	None	None	None	None	None	None	None
Dora-----	None	None	None	None	None	None	None	None	None	None	None	None
Tawas-----	None	None	None	None	None	None	None	None	None	None	None	None
547:												
Deerwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Markey-----	None	None	None	None	None	None	None	None	None	None	None	None
Rosewood-----	None	None	None	None	None	None	None	None	None	None	None	None
Syrene-----	None	None	None	None	None	None	None	None	None	None	None	None
550:												
Dora-----	None	None	None	None	None	None	None	None	None	None	None	None
Boash-----	None	None	None	None	None	None	None	None	None	None	None	None
Seelyeville-----	None	None	None	None	None	None	None	None	None	None	None	None
Woodslake-----	None	None	None	None	None	None	None	None	None	None	None	None
561:												
Bullwinkle-----	None	None	None	None	None	None	None	None	None	None	None	None
Lupton-----	None	None	None	None	None	None	None	None	None	None	None	None
Northwood, wooded-----	None	None	None	None	None	None	None	None	None	None	None	None
Chilgren-----	None	None	None	None	None	None	None	None	None	None	None	None
563:												
Northwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Grygla-----	None	None	None	None	None	None	None	None	None	None	None	None
Berner-----	None	None	None	None	None	None	None	None	None	None	None	None
Strandquist-----	None	None	None	None	None	None	None	None	None	None	None	None

Table 27.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
565:												
Eckvoll-----	None	None	None	None	None	None	None	None	None	None	None	None
Chilgren-----	None	None	None	None	None	None	None	None	None	None	None	None
Grygla-----	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood-----	None	None	None	None	None	None	None	None	None	None	None	None
568:												
Zippel-----	None	None	None	None	None	None	None	None	None	None	None	None
Augsburg, depressional---	None	None	None	None	None	None	None	None	None	None	None	None
Sago-----	None	None	None	None	None	None	None	None	None	None	None	None
Skime-----	None	None	None	None	None	None	None	None	None	None	None	None
569:												
Wabanica-----	None	None	None	None	None	None	None	None	None	None	None	None
Warroad-----	None	None	None	None	None	None	None	None	None	None	None	None
Sax-----	None	None	None	None	None	None	None	None	None	None	None	None
Grano-----	None	None	None	None	None	None	None	None	None	None	None	None
Enstrom-----	None	None	None	None	None	None	None	None	None	None	None	None
570:												
Faunce-----	None	None	None	None	None	None	None	None	None	None	None	None
Clearriver-----	None	None	None	None	None	None	None	None	None	None	None	None
Zimmerman-----	None	None	None	None	None	None	None	None	None	None	None	None
Meehan-----	None	None	None	None	None	None	None	None	None	None	None	None
Pits, gravel.												
581:												
Percy-----	None	None	None	None	None	None	None	None	None	None	None	None
Haug-----	None	None	None	None	None	None	None	None	None	None	None	None
Boash-----	None	None	None	None	None	None	None	None	None	None	None	None
Skagen-----	None	None	None	None	None	None	None	None	None	None	None	None
582:												
Roliss-----	None	None	None	None	None	None	None	None	None	None	None	None
Roliss, depressional---	None	None	None	None	None	None	None	None	None	None	None	None
Boash-----	None	None	None	None	None	None	None	None	None	None	None	None
Haug-----	None	None	None	None	None	None	None	None	None	None	None	None
583:												
Nereson-----	None	None	None	None	None	None	None	None	None	None	None	None
Percy-----	None	None	None	None	None	None	None	None	None	None	None	None
Pelan-----	None	None	None	None	None	None	None	None	None	None	None	None
Foxhome-----	None	None	None	None	None	None	None	None	None	None	None	None

Table 27.--Flooding Frequency and Duration--Continued

[illegible]

Table 27.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1030: Pits, gravel.												
Udipsamments----	None	None	None	None	None	None	None	None	None	None	None	None
Corliss-----	None	None	None	None	None	None	None	None	None	None	None	None
Karlstad-----	None	None	None	None	None	None	None	None	None	None	None	None
Hangaard-----	None	None	None	None	None	None	None	None	None	None	None	None
1031: Seelyeville, ponded-----	None	None	None	None	None	None	None	None	None	None	None	None
Cathro-----	None	None	None	None	None	None	None	None	None	None	None	None
Dora-----	None	None	None	None	None	None	None	None	None	None	None	None
Markey-----	None	None	None	None	None	None	None	None	None	None	None	None
1067: Fluvaquents, frequently flooded-----	None	None	Frequent Very long	Very frequent Very long	Very frequent Long	Frequent Long	Frequent Brief	Frequent Brief	Frequent Long	Frequent Long	Rare Long	None
Hapludalfs-----	None	None	None	None	None	None	None	None	None	None	None	None
Seelyeville----- Water.	None	None	None	None	None	None	None	None	None	None	None	None
1133B:												
Skime-----	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Zippel-----	None	None	None	None	None	None	None	None	None	None	None	None
1134:												
Borup-----	None	None	None	None	None	None	None	None	None	None	None	None
Glyndon-----	None	None	None	None	None	None	None	None	None	None	None	None
Augsburg, depressional---	None	None	None	None	None	None	None	None	None	None	None	None
Skime-----	None	None	None	None	None	None	None	None	None	None	None	None
1144:												
Strathcona, depressional---	None	None	None	None	None	None	None	None	None	None	None	None
Kratka, depressional---	None	None	None	None	None	None	None	None	None	None	None	None
Kratka-----	None	None	None	None	None	None	None	None	None	None	None	None
Northwood-----	None	None	None	None	None	None	None	None	None	None	None	None

Table 27.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1191:												
Sahkahtay-----	None	None	None	None	None	None	None	None	None	None	None	None
Cormant-----	None	None	None	None	None	None	None	None	None	None	None	None
Deerwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Karlstad-----	None	None	None	None	None	None	None	None	None	None	None	None
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
1206:												
Cormant-----	None	None	None	None	None	None	None	None	None	None	None	None
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Leafriver-----	None	None	None	None	None	None	None	None	None	None	None	None
1214:												
Mustinka-----	None	None	None	None	None	None	None	None	None	None	None	None
Espelie-----	None	None	None	None	None	None	None	None	None	None	None	None
Wildwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Dalbo-----	None	None	None	None	None	None	None	None	None	None	None	None
1274B:												
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Leafriver, wooded-----	None	None	None	None	None	None	None	None	None	None	None	None
Clearriver-----	None	None	None	None	None	None	None	None	None	None	None	None
Cormant-----	None	None	None	None	None	None	None	None	None	None	None	None
Zimmerman-----	None	None	None	None	None	None	None	None	None	None	None	None
1298:												
Borup-----	None	None	None	None	None	None	None	None	None	None	None	None
Augsburg, depressional---	None	None	None	None	None	None	None	None	None	None	None	None
Glyndon-----	None	None	None	None	None	None	None	None	None	None	None	None
Sago-----	None	None	None	None	None	None	None	None	None	None	None	None
Skime-----	None	None	None	None	None	None	None	None	None	None	None	None
1302:												
Foldahl-----	None	None	None	None	None	None	None	None	None	None	None	None
Kratka-----	None	None	None	None	None	None	None	None	None	None	None	None
Foxhome-----	None	None	None	None	None	None	None	None	None	None	None	None
1304:												
Glyndon-----	None	None	None	None	None	None	None	None	None	None	None	None
Borup-----	None	None	None	None	None	None	None	None	None	None	None	None
Skime-----	None	None	None	None	None	None	None	None	None	None	None	None

Table 27.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1399B:												
Two Inlets-----	None	None	None	None	None	None	None	None	None	None	None	None
Wurtsmith-----	None	None	None	None	None	None	None	None	None	None	None	None
Zimmerman-----	None	None	None	None	None	None	None	None	None	None	None	None
Meehan-----	None	None	None	None	None	None	None	None	None	None	None	None
1401:												
Grygla, depressional---	None	None	None	None	None	None	None	None	None	None	None	None
Northwood, wooded-----	None	None	None	None	None	None	None	None	None	None	None	None
Chilgren-----	None	None	None	None	None	None	None	None	None	None	None	None
Grygla-----	None	None	None	None	None	None	None	None	None	None	None	None
1402:												
Leafriver, wooded-----	None	None	None	None	None	None	None	None	None	None	None	None
Cormant-----	None	None	None	None	None	None	None	None	None	None	None	None
Tawas-----	None	None	None	None	None	None	None	None	None	None	None	None
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
1404:												
Berner, wooded--	None	None	None	None	None	None	None	None	None	None	None	None
Lupton-----	None	None	None	None	None	None	None	None	None	None	None	None
Northwood, wooded-----	None	None	None	None	None	None	None	None	None	None	None	None
Grygla-----	None	None	None	None	None	None	None	None	None	None	None	None
1405:												
Lallie-----	None	None	None	None	None	None	None	None	None	None	None	None
Sax-----	None	None	None	None	None	None	None	None	None	None	None	None
Wabanica-----	None	None	None	None	None	None	None	None	None	None	None	None
1414:												
Nereson, very cobble-----	None	None	None	None	None	None	None	None	None	None	None	None
Percy, very cobble-----	None	None	None	None	None	None	None	None	None	None	None	None
Pelan-----	None	None	None	None	None	None	None	None	None	None	None	None
Foxhome-----	None	None	None	None	None	None	None	None	None	None	None	None
1428:												
Karlsruhe-----	None	None	None	None	None	None	None	None	None	None	None	None
Syrene-----	None	None	None	None	None	None	None	None	None	None	None	None
Ulen-----	None	None	None	None	None	None	None	None	None	None	None	None

Table 28.--Ponding Frequency, Duration, and Depth

(Depths of ponding are in feet.)

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
47:												
Colvin-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	Rare Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Bearden-----	None	None	None	None	None	None	None	None	None	None	None	None
Grano-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Sax-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
48B:												
Hiwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
Clearriver-----	None	None	None	None	None	None	None	None	None	None	None	None
Cormant-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None
Zimmerman-----	None	None	None	None	None	None	None	None	None	None	None	None
52:												
Augsburg-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Croke-----	None	None	None	None	None	None	None	None	None	None	None	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
52:												
Grano-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Sago-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
59:												
Grimstad-----	None	None	None	None	None	None	None	None	None	None	None	None
Strathcona-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Foxhome-----	None	None	None	None	None	None	None	None	None	None	None	None
64:												
Ulen-----	None	None	None	None	None	None	None	None	None	None	None	None
Rosewood-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
Rushlake-----	None	None	None	None	None	None	None	None	None	None	None	None
65:												
Foxhome-----	None	None	None	None	None	None	None	None	None	None	None	None
Strandquist-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	None	None	Rare Very brief Depth: 0.3	None	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
65: Skagen-----	None	None	None	None	None	None	None	None	None	None	None	None
67: Bearden-----	None	None	None	None	None	None	None	None	None	None	None	None
Colvin-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	Rare Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
77: Garnes-----	None	None	None	None	None	None	None	None	None	None	None	None
Chilgren-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Eckvoll-----	None	None	None	None	None	None	None	None	None	None	None	None
Pelan-----	None	None	None	None	None	None	None	None	None	None	None	None
111: Hangaard-----	None	None	None	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	None	None	None
Deerwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Rushlake-----	None	None	None	None	None	None	None	None	None	None	None	None
Rosewood-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
116:												
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
Cormant-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None
Hiwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Leafriver-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
117:												
Cormant-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None
Leafriver-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Epoufette-----	None	None	None	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	None	None
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
Grygla, depressional---	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
133:												
Dalbo-----	None	None	None	None	None	None	None	None	None	None	None	None
Mustinka-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Moranville-----	None	None	None	None	None	None	None	None	None	None	None	None
145:												
Enstrom-----	None	None	None	None	None	None	None	None	None	None	None	None
Grygla-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
Pelan-----	None	None	None	None	None	None	None	None	None	None	None	None
147:												
Spooner-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Baudette-----	None	None	None	None	None	None	None	None	None	None	None	None
Grygla-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Sago-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
158B:												
Zimmerman-----	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets-----	None	None	None	None	None	None	None	None	None	None	None	None
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
167B:												
Baudette-----	None	None	None	None	None	None	None	None	None	None	None	None
Spooner-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Moranville-----	None	None	None	None	None	None	None	None	None	None	None	None
187:												
Haug-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Percy-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Cathro-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Boash-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
191:												
Epoufette-----	None	None	None	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	None	None
Cormant-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None
Leafriver-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Meehan-----	None	None	None	None	None	None	None	None	None	None	None	None
202:												
Meehan-----	None	None	None	None	None	None	None	None	None	None	None	None
Cormant-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None
Wurtsmith-----	None	None	None	None	None	None	None	None	None	None	None	None
Leafriver-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
205:												
Karlstad-----	None	None	None	None	None	None	None	None	None	None	None	None
Sahkahtay-----	None	None	None	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	None	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
205:												
Marquette-----	None	None	None	None	None	None	None	None	None	None	None	None
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
Pits, gravel.												
242B:												
Marquette-----	None	None	None	None	None	None	None	None	None	None	None	None
Karlstad-----	None	None	None	None	None	None	None	None	None	None	None	None
Pits, gravel.												
280:												
Pelan-----	None	None	None	None	None	None	None	None	None	None	None	None
Strandquist-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	None	None	Rare Very brief Depth: 0.3	None	None
Garnes-----	None	None	None	None	None	None	None	None	None	None	None	None
Marquette-----	None	None	None	None	None	None	None	None	None	None	None	None
Pits, gravel.												
379:												
Percy, very cobbly-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Boash-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
379: Strandquist-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	None	None	Rare Very brief Depth: 0.3	None	None
Haug-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Skagen, very cobbly-----	None	None	None	None	None	None	None	None	None	None	None	None
383: Percy-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Boash-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Strandquist-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	None	None	Rare Very brief Depth: 0.3	None	None
Haug-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Skagen-----	None	None	None	None	None	None	None	None	None	None	None	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
384: Percy, depressional---	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Haug-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Percy-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Boash-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
387: Roliss, depressional---	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Haug-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Roliss-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
404:												
Chilgren-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Garnes-----	None	None	None	None	None	None	None	None	None	None	None	None
Grygla-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Haug-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
412:												
Mavie-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	None	None	Rare Very brief Depth: 0.3	None	None
Foxhome-----	None	None	None	None	None	None	None	None	None	None	None	None
Northwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Percy, very cobbly-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
432: Strandquist-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	None	None	Rare Very brief Depth: 0.3	None	None
Percy, very cobbly-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Haug-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Boash-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Foxhome-----	None	None	None	None	None	None	None	None	None	None	None	None
433: Syrene, depressional---	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Deerwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
433: Rosewood-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None
Syrene-----	None	None	None	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	None	None	None
435: Syrene-----	None	None	None	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	None	None	None
Rosewood-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None
Syrene, depressional---	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Karlsruhe-----	None	None	None	None	None	None	None	None	None	None	None	None
Deerwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
439: Strathcona-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Northwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Percy-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Grimstad-----	None	None	None	None	None	None	None	None	None	None	None	None
Strandquist-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	None	None	Rare Very brief Depth: 0.3	None	None
481: Kratka-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Northwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Percy-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
481:												
Enstrom-----	None	None	None	None	None	None	None	None	None	None	None	None
Strandquist-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	None	None	Rare Very brief Depth: 0.3	None	None
482:												
Grygla-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Chilgren-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Grygla, depressional---	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Enstrom-----	None	None	None	None	None	None	None	None	None	None	None	None
Northwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
532:												
Sago-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
532:												
Cathro-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Zippel-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.1	Occasional Very brief Depth: 0.1	Occasional Very brief Depth: 0.1	None
534:												
Mooselake-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Bullwinkle-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Dora-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Tawas-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
540:												
Seelyeville-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
540:												
Cathro-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Dora-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Markey-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
541:												
Rifle-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Tacoosh-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
543:												
Markey-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Cormant-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
543: Seelyeville-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
544: Cathro-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Percy, very cobble-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Grygla-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Seelyeville-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
546: Lupton-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Bullwinkle-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
546:												
Dora-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Tawas-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
547:												
Deerwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Markey-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Rosewood-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None
Syrene-----	None	None	None	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	None	None	None
550:												
Dora-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
550:												
Boash-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Seelyeville----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Woodslake-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
561:												
Bullwinkle-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Lupton-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Northwood, wooded-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Chilgren-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
563:												
Northwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Grygla-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Berner-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Strandquist----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	None	None	Rare Very brief Depth: 0.3	None	None
565:												
Eckvoll-----	None	None	None	None	None	None	None	None	None	None	None	None
Chilgren-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Grygla-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Hiwood-----	None	None	None	None	None	None	None	None	None	None	None	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
568: Zippel-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.1	Occasional Very brief Depth: 0.1	Occasional Very brief Depth: 0.1	None
Augsburg, depressional---	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Sago-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Skime-----	None	None	None	None	None	None	None	None	None	None	None	None
569: Wabanica-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	Rare Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Warroad-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Sax-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Grano-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
569: Enstrom-----	None	None	None	None	None	None	None	None	None	None	None	None
570: Faunce-----	None	None	None	None	None	None	None	None	None	None	None	None
Clearriver-----	None	None	None	None	None	None	None	None	None	None	None	None
Zimmerman-----	None	None	None	None	None	None	None	None	None	None	None	None
Meehan-----	None	None	None	None	None	None	None	None	None	None	None	None
Pits, gravel.												
581: Percy-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Haug-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Boash-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Skagen-----	None	None	None	None	None	None	None	None	None	None	None	None
582: Roliss-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
582: Roliss, depressional---	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Boash-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Haug-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
583: Nereson-----	None	None	None	None	None	None	None	None	None	None	None	None
Percy-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Pelan-----	None	None	None	None	None	None	None	None	None	None	None	None
Foxhome-----	None	None	None	None	None	None	None	None	None	None	None	None
627: Tawas-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Leafriver-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
627:												
Lupton-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Cormant-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None
630:												
Wildwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Boash-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Dora-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Espelie-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
643:												
Huot-----	None	None	None	None	None	None	None	None	None	None	None	None
Thiefriver-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
643: Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
644: Boash-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Percy-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Woodslake-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Strandquist-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	None	None	Rare Very brief Depth: 0.3	None	None
645: Espelie-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Grano-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Hilaire-----	None	None	None	None	None	None	None	None	None	None	None	None
Wildwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
651:												
Thiefriver-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Grano-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Huot-----	None	None	None	None	None	None	None	None	None	None	None	None
Wildwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
708:												
Rushlake-----	None	None	None	None	None	None	None	None	None	None	None	None
Corliss-----	None	None	None	None	None	None	None	None	None	None	None	None
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
Hangaard-----	None	None	None	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	None	None	None
Pits, gravel.												
712:												
Rosewood-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
712:												
Deerwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Hangaard-----	None	None	None	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	None	None	None
Ulen-----	None	None	None	None	None	None	None	None	None	None	None	None
721B:												
Corliss-----	None	None	None	None	None	None	None	None	None	None	None	None
Rushlake-----	None	None	None	None	None	None	None	None	None	None	None	None
Hangaard-----	None	None	None	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	None	None	None
Pits, gravel.												
733:												
Berner-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Grygla-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Seelyeville----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
737:												
Mahkonce-----	None	None	None	None	None	None	None	None	None	None	None	None
Auganaush-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	Occasional Very brief Depth: 0.1	Occasional Brief Depth: 0.3	None
Eckvoll-----	None	None	None	None	None	None	None	None	None	None	None	None
755:												
Woodslake-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Boash-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Wildwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Dora-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
767:												
Auganaush-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	Occasional Very brief Depth: 0.1	Occasional Brief Depth: 0.3	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
767:												
Mustinka-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Wildwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Mahkonce-----	None	None	None	None	None	None	None	None	None	None	None	None
794:												
Clearriver-----	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Meehan-----	None	None	None	None	None	None	None	None	None	None	None	None
Faunce-----	None	None	None	None	None	None	None	None	None	None	None	None
1002:												
Fluvaquents, frequently flooded-----	Frequent Very long Depth: 0.5	Frequent Very long Depth: 0.5	Frequent Very long Depth: 0.5	Frequent Very long Depth: 0.7	Frequent Very long Depth: 0.7	Frequent Very long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Very long Depth: 0.5
Seelyeville-----	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0
Hapludalfs-----	None	None	None	None	None	None	None	None	None	None	None	None
Water.												
1030:												
Pits, gravel.												
Udipsamments.												

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1030:												
Corliss-----	None	None	None	None	None	None	None	None	None	None	None	None
Karlstad-----	None	None	None	None	None	None	None	None	None	None	None	None
Hangaard-----	None	None	None	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	None	None	None
1031:												
Seelyeville, ponded-----	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0
Cathro-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Dora-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Markey-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
1067:												
Fluvaquents, frequently flooded-----	Frequent Very long Depth: 0.5	Frequent Very long Depth: 0.5	Frequent Very long Depth: 0.5	Frequent Very long Depth: 0.7	Frequent Very long Depth: 0.7	Frequent Very long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Very long Depth: 0.5
Hapludalfs-----	None	None	None	None	None	None	None	None	None	None	None	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1067: Seelyeville-----	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0
Water.												
1133B: Skime-----	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Zippel-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.1	Occasional Very brief Depth: 0.1	Occasional Very brief Depth: 0.1	None
1134: Borup-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	Occasional Very brief Depth: 0.1	None
Glyndon-----	None	None	None	None	None	None	None	None	None	None	None	None
Augsburg, depressional---	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Skime-----	None	None	None	None	None	None	None	None	None	None	None	None
1144: Strathcona, depressional---	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1144: Kratka, depressional---	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Kratka-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Northwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
1154: Sax-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Wabanica-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	Rare Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Cathro-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Woodslake-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1158:												
Skagen-----	None	None	None	None	None	None	None	None	None	None	None	None
Percy-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Foxhome-----	None	None	None	None	None	None	None	None	None	None	None	None
1170:												
Skagen, very cobbly-----	None	None	None	None	None	None	None	None	None	None	None	None
Percy, very cobbly-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Foxhome-----	None	None	None	None	None	None	None	None	None	None	None	None
1179B:												
Moranville-----	None	None	None	None	None	None	None	None	None	None	None	None
Baudette-----	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Spooner-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
1181:												
Rosewood-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	None	None	Rare Very brief Depth: 0.3	None	None
Ulen-----	None	None	None	None	None	None	None	None	None	None	None	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1181:												
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
Deerwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Syrene-----	None	None	None	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	None	None	None
1182:												
Warroad-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Wabanica-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	Rare Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Enstrom-----	None	None	None	None	None	None	None	None	None	None	None	None
Sax-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
1187:												
Dora, ponded---	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0
Seelyeville, ponded-----	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1187:												
Wildwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Boash-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
1191:												
Sahkahtay-----	None	None	None	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	None	None
Cormant-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None
Deerwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Karlstad-----	None	None	None	None	None	None	None	None	None	None	None	None
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
1206:												
Cormant-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	None	None	Rare Very brief Depth: 0.3	None	None
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood-----	None	None	None	None	None	None	None	None	None	None	None	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1206: Leafriver-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
1214: Mustinka-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Espelie-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Wildwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Dalbo-----	None	None	None	None	None	None	None	None	None	None	None	None
1274B: Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
Hiwood-----	None	None	None	None	None	None	None	None	None	None	None	None
Leafriver, wooded-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Clearriver-----	None	None	None	None	None	None	None	None	None	None	None	None
Cormant-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1274B: Zimmerman-----	None	None	None	None	None	None	None	None	None	None	None	None
1298: Borup-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	Occasional Very brief Depth: 0.1	None
Augsburg, depressional---	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Glyndon-----	None	None	None	None	None	None	None	None	None	None	None	None
Sago-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Skime-----	None	None	None	None	None	None	None	None	None	None	None	None
1302: Foldahl-----	None	None	None	None	None	None	None	None	None	None	None	None
Kratka-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Foxhome-----	None	None	None	None	None	None	None	None	None	None	None	None
1304: Glyndon-----	None	None	None	None	None	None	None	None	None	None	None	None
Borup-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	Occasional Very brief Depth: 0.1	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1304: Skime-----	None	None	None	None	None	None	None	None	None	None	None	None
1305: Hilaire-----	None	None	None	None	None	None	None	None	None	None	None	None
Espelie-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Grano-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
1314: Tacoosh-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Rifle-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Sax-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
1316: Wheatville-----	None	None	None	None	None	None	None	None	None	None	None	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1316:												
Augsburg-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Grano-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
1326:												
Augsburg, depressional---	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Wabanica, depressional---	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Sax-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Espelie-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
Zippel-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.1	Occasional Very brief Depth: 0.1	Occasional Very brief Depth: 0.1	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1327B:												
Karlstad-----	None	None	None	None	None	None	None	None	None	None	None	None
Marquette-----	None	None	None	None	None	None	None	None	None	None	None	None
Sahkahtay-----	None	None	None	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	None	None
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
1328:												
Northwood, wooded-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Berner, wooded--	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Grygla-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
1333:												
Dora, wooded----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Lupton-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1333:												
Wildwood-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Auganaush-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	Occasional Very brief Depth: 0.1	Occasional Brief Depth: 0.3	None
1356: Water, miscellaneous.												
1399B:												
Two Inlets-----	None	None	None	None	None	None	None	None	None	None	None	None
Wurtsmith-----	None	None	None	None	None	None	None	None	None	None	None	None
Zimmerman-----	None	None	None	None	None	None	None	None	None	None	None	None
Meehan-----	None	None	None	None	None	None	None	None	None	None	None	None
1401: Grygla, depressional---	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Northwood, wooded-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Chilgren-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1401: Grygla-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
1402: Leafriver, wooded-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Cormant-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None
Tawas-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
1404: Berner, wooded--	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Lupton-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1404: Northwood, wooded-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Frequent Long Depth: 0.3	Frequent Long Depth: 0.3	Occasional Brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Grygla-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	Rare Very brief Depth: 0.1	Rare Very brief Depth: 0.1	None
1405: Lallie-----	Frequent Very long Depth: 0.5	Frequent Very long Depth: 0.5	Frequent Very long Depth: 0.5	Frequent Very long Depth: 0.7	Frequent Very long Depth: 0.7	Frequent Very long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Very long Depth: 0.5
Sax-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Wabanica-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	None	Rare Very brief Depth: 0.3	Occasional Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
1414: Nereson, very cobbly-----	None	None	None	None	None	None	None	None	None	None	None	None
Percy, very cobbly-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Pelan-----	None	None	None	None	None	None	None	None	None	None	None	None
Foxhome-----	None	None	None	None	None	None	None	None	None	None	None	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1428:												
Karlsruhe-----	None	None	None	None	None	None	None	None	None	None	None	None
Syrene-----	None	None	None	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.1	None	None	None	None	None	None
Ulen-----	None	None	None	None	None	None	None	None	None	None	None	None
1444:												
Wurtsmith-----	None	None	None	None	None	None	None	None	None	None	None	None
Meehan-----	None	None	None	None	None	None	None	None	None	None	None	None
Clearriver-----	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets-----	None	None	None	None	None	None	None	None	None	None	None	None
Cormant-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None
1448:												
Grano-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Percy-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Augsburg-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1448: Woodslake-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
1449: Grano-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
Percy-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Augsburg-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Woodslake-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
1807: Cathro, ponded--	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0
Haug-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1807: Seelyeville, ponded-----	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0
Percy-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
1808: Markey, ponded--	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0
Leafriver-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Seelyeville, ponded-----	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Very long Depth: 1.0
Cormant-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None
1918: Croke-----	None	None	None	None	None	None	None	None	None	None	None	None
Augsburg-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	None

Table 28.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1918:												
Grano-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Rare Very brief Depth: 0.2	Occasional Very brief Depth: 0.2	Occasional Brief Depth: 0.3	None
1923B:												
Garnes, very stony-----	None	None	None	None	None	None	None	None	None	None	None	None
Chilgren-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	None	None	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	None
Eckvoll-----	None	None	None	None	None	None	None	None	None	None	None	None
Pelan-----	None	None	None	None	None	None	None	None	None	None	None	None
1984:												
Leafriver-----	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Brief Depth: 0.5	Occasional Long Depth: 0.5	Occasional Long Depth: 0.5
Cormant-----	None	None	None	Occasional Brief Depth: 0.3	Occasional Very brief Depth: 0.3	Rare Very brief Depth: 0.2	None	None	None	Rare Very brief Depth: 0.2	None	None
Markey-----	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.5	Frequent Long Depth: 0.5	Frequent Long Depth: 0.5	Occasional Brief Depth: 0.5	Rare Very brief Depth: 0.3	Rare Very brief Depth: 0.3	Rare Brief Depth: 0.3	Occasional Brief Depth: 0.3	Occasional Long Depth: 0.3	Occasional Long Depth: 0.3
Redby-----	None	None	None	None	None	None	None	None	None	None	None	None
W: Water.												

Table 29.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and component name	Percent of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
47:		In	In			
Colvin-----	85	0	---	High	High	Low
Bearden-----	5	0	---	High	High	Low
Grano-----	5	0	---	High	High	Low
Sax-----	5	2-8	2-12	High	High	Moderate
48B:						
Hiwood-----	85	0	---	Moderate	Low	Low
Redby-----	7	0	---	Moderate	Low	Low
Clearriver-----	3	0	---	Low	Low	Moderate
Cormant-----	3	0	---	Moderate	High	Low
Zimmerman-----	2	0	---	Low	Low	High
52:						
Augsburg-----	85	0	---	High	High	Low
Croke-----	5	0	---	High	High	Low
Grano-----	5	0	---	High	High	Low
Sago-----	5	2-8	2-12	High	High	Moderate
59:						
Grimstad-----	85	0	---	Moderate	Moderate	Low
Strathcona-----	12	0	---	High	High	Low
Foxhome-----	3	0	---	High	Moderate	Low
64:						
Ulen-----	85	0	---	Moderate	Low	Low
Rosewood-----	10	0	---	Moderate	High	Low
Redby-----	3	0	---	Moderate	Low	Low
Rushlake-----	2	0	---	Moderate	Moderate	Low
65:						
Foxhome-----	85	0	---	High	Moderate	Low
Strandquist-----	12	0	---	High	High	Low
Skagen-----	3	0	---	High	High	Low
67:						
Bearden-----	85	0	---	High	High	Low
Colvin-----	15	0	---	High	High	Low

Table 29.--Soil Features--Continued

Map symbol and component name	Percent of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
77:		In	In			
Garnes-----	85	0	---	High	Moderate	Low
Chilgren-----	10	0	---	High	High	Low
Eckvoll-----	3	0	---	High	Moderate	Low
Pelan-----	2	0	---	Moderate	Moderate	Low
111:						
Hangaard-----	90	0	---	Moderate	High	Low
Deerwood-----	5	2-8	2-12	Moderate	High	Low
Rushlake-----	3	0	---	Moderate	Moderate	Low
Rosewood-----	2	0	---	Moderate	High	Low
116:						
Redby-----	85	0	---	Moderate	Low	Low
Cormant-----	8	0	---	Moderate	High	Low
Hiwood-----	6	0	---	Moderate	Low	Low
Leafriver-----	1	2-8	2-12	High	High	High
117:						
Cormant-----	85	0	---	Moderate	High	Low
Leafriver-----	7	2-8	2-12	High	High	High
Epoufette-----	3	0	---	High	High	Moderate
Redby-----	3	0	---	Moderate	Low	Low
Grygla, depressional---	2	0	---	High	High	Low
133:						
Dalbo-----	85	0	---	High	High	Moderate
Mustinka-----	10	0	---	High	High	Low
Moranville-----	5	0	---	High	Moderate	Low
145:						
Enstrom-----	85	0	---	Moderate	Moderate	Low
Grygla-----	10	0	---	High	High	Low
Redby-----	4	0	---	Moderate	Low	Low
Pelan-----	1	0	---	Moderate	Moderate	Low
147:						
Spooner-----	85	0	---	High	High	Low
Baudette-----	5	0	---	High	Moderate	Low
Grygla-----	5	0	---	High	High	Low
Sago-----	5	2-8	2-12	High	High	Moderate

Table 29.--Soil Features--Continued

Map symbol and component name	Percent of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
158B:		In	In			
Zimmerman-----	85	0	---	Low	Low	High
Hiwood-----	6	0	---	Moderate	Low	Low
Two Inlets-----	6	0	---	Low	Low	Low
Redby-----	3	0	---	Moderate	Low	Low
167B:						
Baudette-----	85	0	---	High	Moderate	Low
Spooner-----	10	0	---	High	High	Low
Moranville-----	5	0	---	High	Moderate	Low
187:						
Haug-----	90	2-8	2-12	High	High	Low
Percy-----	5	0	---	High	High	Low
Cathro-----	3	2-12	12-45	High	High	Low
Boash-----	2	0	---	High	High	Low
191:						
Epoufette-----	85	0	---	High	High	Moderate
Cormant-----	5	0	---	Moderate	High	Low
Leafriver-----	5	2-8	2-12	High	High	High
Meehan-----	5	0	---	Moderate	Low	Moderate
202:						
Meehan-----	85	0	---	Moderate	Low	Moderate
Cormant-----	8	0	---	Moderate	High	Low
Wurtsmith-----	5	0	---	Low	Low	High
Leafriver-----	2	2-8	2-12	High	High	High
205:						
Karlstad-----	85	0	---	Moderate	Low	Low
Sahkahtay-----	7	0	---	Moderate	High	Low
Marquette-----	5	0	---	Low	Low	Low
Redby-----	2	0	---	Moderate	Low	Low
Pits, gravel-----	1	---	---	---	---	---
242B:						
Marquette-----	85	0	---	Low	Low	Low
Karlstad-----	14	0	---	Moderate	Low	Low
Pits, gravel-----	1	---	---	---	---	---

Table 29.--Soil Features--Continued

Map symbol and component name	Percent of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
280:		In	In			
Pelan-----	85	0	---	Moderate	Moderate	Low
Strandquist-----	10	0	---	High	High	Low
Garnes-----	3	0	---	High	Moderate	Low
Marquette-----	1	0	---	Low	Low	Low
Pits, gravel-----	1	---	---	---	---	---
379:						
Percy, very cobbly----	90	0	---	High	High	Low
Boash-----	3	0	---	High	High	Low
Strandquist-----	3	0	---	High	High	Low
Haug-----	2	2-8	2-12	High	High	Low
Skagen, very cobbly----	2	0	---	High	High	Low
383:						
Percy-----	90	0	---	High	High	Low
Boash-----	3	0	---	High	High	Low
Strandquist-----	3	0	---	High	High	Low
Haug-----	2	2-8	2-12	High	High	Low
Skagen-----	2	0	---	High	High	Low
384:						
Percy, depression-----	85	0	---	High	High	Low
Haug-----	7	2-8	2-12	High	High	Low
Percy-----	5	0	---	High	High	Low
Boash-----	3	0	---	High	High	Low
387:						
Roliss, depression---	85	0	---	High	High	Low
Haug-----	10	2-8	2-12	High	High	Low
Roliss-----	5	0	---	High	High	Low
404:						
Chilgren-----	85	0	---	High	High	Low
Garnes-----	5	0	---	High	Moderate	Low
Grygla-----	5	0	---	High	High	Low
Haug-----	5	2-8	2-12	High	High	Low
412:						
Mavie-----	85	0	---	High	High	Low
Foxhome-----	5	0	---	High	Moderate	Low

Table 29.--Soil Features--Continued

Map symbol and component name	Percent of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
412:		In	In			
Northwood-----	5	2-8	2-12	High	High	Low
Percy, very cobbly----	5	0	---	High	High	Low
432:						
Strandquist-----	85	0	---	High	High	Low
Percy, very cobbly----	5	0	---	High	High	Low
Haug-----	4	2-8	2-12	High	High	Low
Boash-----	3	0	---	High	High	Low
Foxhome-----	3	0	---	High	Moderate	Low
433:						
Syrene, depressional---	85	0	---	Moderate	High	Low
Deerwood-----	5	2-8	2-12	Moderate	High	Low
Rosewood-----	5	0	---	Moderate	High	Low
Syrene-----	5	0	---	Moderate	High	Low
435:						
Syrene-----	85	0	---	Moderate	High	Low
Rosewood-----	5	0	---	Moderate	High	Low
Syrene, depressional---	5	0	---	Moderate	High	Low
Karlsruhe-----	3	0	---	Moderate	High	Low
Deerwood-----	2	2-8	2-12	Moderate	High	Low
439:						
Strathcona-----	85	0	---	High	High	Low
Northwood-----	5	2-8	2-12	High	High	Low
Percy-----	5	0	---	High	High	Low
Grimstad-----	3	0	---	Moderate	Moderate	Low
Strandquist-----	2	0	---	High	High	Low
481:						
Kratka-----	85	0	---	Moderate	High	Low
Northwood-----	5	2-8	2-12	High	High	Low
Percy-----	5	0	---	High	High	Low
Enstrom-----	3	0	---	Moderate	Moderate	Low
Strandquist-----	2	0	---	High	High	Low
482:						
Grygla-----	85	0	---	High	High	Low
Chilgren-----	5	0	---	High	High	Low

Table 29.--Soil Features--Continued

Map symbol and component name	Percent of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
482:		In	In			
Grygla, depressional---	5	0	---	High	High	Low
Enstrom-----	3	0	---	Moderate	Moderate	Low
Northwood-----	2	2-8	2-12	High	High	Low
532:						
Sago-----	90	2-8	2-12	High	High	Moderate
Cathro-----	5	2-12	12-45	High	High	Low
Zippel-----	5	0	---	High	High	Low
534:						
Mooselake-----	90	2-12	6-45	High	High	High
Bullwinkle-----	4	2-12	12-45	High	High	Moderate
Dora-----	3	2-12	12-45	High	High	Moderate
Tawas-----	3	2-12	12-45	High	High	Moderate
540:						
Seelyeville-----	90	2-12	12-50	High	High	Moderate
Cathro-----	4	2-12	12-45	High	High	Low
Dora-----	3	2-12	12-45	High	High	Moderate
Markey-----	3	2-12	12-45	High	High	Low
541:						
Rifle-----	90	2-12	6-45	High	High	Low
Tacoosh-----	10	2-12	6-45	High	High	Moderate
543:						
Markey-----	90	2-12	12-45	High	High	Low
Cormant-----	5	0	---	Moderate	High	Low
Seelyeville-----	5	2-12	12-50	High	High	Moderate
544:						
Cathro-----	90	2-12	12-45	High	High	Low
Percy, very cobbly----	4	0	---	High	High	Low
Grygla-----	3	0	---	High	High	Low
Seelyeville-----	3	2-12	12-50	High	High	Moderate
546:						
Lupton-----	90	2-12	12-50	High	High	Low
Bullwinkle-----	4	2-12	12-45	High	High	Moderate
Dora-----	3	2-12	12-45	High	High	Moderate
Tawas-----	3	2-12	12-45	High	High	Moderate

Table 29.--Soil Features--Continued

Map symbol and component name	Percent of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
547:		In	In			
Deerwood-----	90	2-8	2-12	Moderate	High	Low
Markey-----	4	2-12	12-45	High	High	Low
Rosewood-----	3	0	---	Moderate	High	Low
Syrene-----	3	0	---	Moderate	High	Low
550:						
Dora-----	90	2-12	12-45	High	High	Moderate
Boash-----	4	0	---	High	High	Low
Seelyeville-----	3	2-12	12-50	High	High	Moderate
Woodslake-----	3	0	---	Moderate	High	Low
561:						
Bullwinkle-----	90	2-12	12-45	High	High	Moderate
Lupton-----	4	2-12	12-50	High	High	Low
Northwood, wooded-----	4	2-8	2-12	High	High	Low
Chilgren-----	2	0	---	High	High	Low
563:						
Northwood-----	90	2-8	2-12	High	High	Low
Grygla-----	4	0	---	High	High	Low
Berner-----	3	2-12	12-45	High	High	Moderate
Strandquist-----	3	0	---	High	High	Low
565:						
Eckvoll-----	85	0	---	High	Moderate	Low
Chilgren-----	5	0	---	High	High	Low
Grygla-----	5	0	---	High	High	Low
Hiwood-----	5	0	---	Moderate	Low	Low
568:						
Zippel-----	85	0	---	High	High	Low
Augsburg, depressional-	5	0	---	High	High	Low
Sago-----	5	2-8	2-12	High	High	Moderate
Skime-----	5	0	---	Moderate	Low	Low
569:						
Wabanica-----	85	0	---	High	High	Low
Warroad-----	6	0	---	High	High	Low
Sax-----	4	2-8	2-12	High	High	Moderate
Grano-----	3	0	---	High	High	Low
Enstrom-----	2	0	---	Moderate	Moderate	Low

Table 29.--Soil Features--Continued

Map symbol and component name	Percent of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
570:		In	In			
Faunce-----	85	0	---	Low	Low	Moderate
Clearriver-----	7	0	---	Low	Low	Moderate
Zimmerman-----	4	0	---	Low	Low	High
Meehan-----	3	0	---	Moderate	Low	Moderate
Pits, gravel-----	1	---	---	---	---	---
581:						
Percy-----	90	0	---	High	High	Low
Haug-----	5	2-8	2-12	High	High	Low
Boash-----	3	0	---	High	High	Low
Skagen-----	2	0	---	High	High	Low
582:						
Roliss-----	85	0	---	High	High	Low
Roliss, depressional---	7	0	---	High	High	Low
Boash-----	5	0	---	High	High	Low
Haug-----	3	2-8	2-12	High	High	Low
583:						
Nereson-----	85	0	---	High	Moderate	Low
Percy-----	10	0	---	High	High	Low
Pelan-----	3	0	---	Moderate	Moderate	Low
Foxhome-----	2	0	---	High	Moderate	Low
627:						
Tawas-----	90	2-12	12-45	High	High	Moderate
Leafriver-----	4	2-8	2-12	High	High	High
Lupton-----	4	2-12	12-50	High	High	Low
Cormant-----	2	0	---	Moderate	High	Low
630:						
Wildwood-----	90	2-8	2-12	High	High	Low
Boash-----	4	0	---	High	High	Low
Dora-----	4	2-12	12-45	High	High	Moderate
Espelie-----	2	0	---	High	High	Low
643:						
Huot-----	85	0	---	High	High	Low
Thiefriver-----	12	0	---	High	High	Low
Redby-----	3	0	---	Moderate	Low	Low

Table 29.--Soil Features--Continued

Map symbol and component name	Percent of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
644:		In	In			
Boash-----	85	0	---	High	High	Low
Percy-----	7	0	---	High	High	Low
Woodslake-----	5	0	---	Moderate	High	Low
Strandquist-----	3	0	---	High	High	Low
645:						
Espelie-----	85	0	---	High	High	Low
Grano-----	5	0	---	High	High	Low
Hilaire-----	5	0	---	High	Moderate	Low
Wildwood-----	5	2-8	2-12	High	High	Low
651:						
Thiefriver-----	85	0	---	High	High	Low
Grano-----	5	0	---	High	High	Low
Huot-----	5	0	---	High	High	Low
Wildwood-----	5	2-8	2-12	High	High	Low
708:						
Rushlake-----	85	0	---	Moderate	Moderate	Low
Corliss-----	6	0	---	Low	Low	Low
Redby-----	5	0	---	Moderate	Low	Low
Hangaard-----	3	0	---	Moderate	High	Low
Pits, gravel-----	1	---	---	---	---	---
712:						
Rosewood-----	85	0	---	Moderate	High	Low
Deerwood-----	6	2-8	2-12	Moderate	High	Low
Hangaard-----	5	0	---	Moderate	High	Low
Ulen-----	4	0	---	Moderate	Low	Low
721B:						
Corliss-----	85	0	---	Low	Low	Low
Rushlake-----	10	0	---	Moderate	Moderate	Low
Hangaard-----	4	0	---	Moderate	High	Low
Pits, gravel-----	1	---	---	---	---	---
733:						
Berner-----	90	2-12	12-45	High	High	Moderate
Grygla-----	5	0	---	High	High	Low
Seelyeville-----	5	2-12	12-50	High	High	Moderate

Table 29.--Soil Features--Continued

Map symbol and component name	Percent of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
737:		In	In			
Mahkonce-----	85	0	---	High	High	Low
Auganaush-----	10	0	---	High	High	Moderate
Eckvoll-----	5	0	---	High	Moderate	Low
755:						
Woodslake-----	85	0	---	Moderate	High	Low
Boash-----	8	0	---	High	High	Low
Wildwood-----	5	2-8	2-12	High	High	Low
Dora-----	2	2-12	12-45	High	High	Moderate
767:						
Auganaush-----	90	0	---	High	High	Moderate
Mustinka-----	5	0	---	High	High	Low
Wildwood-----	3	2-8	2-12	High	High	Low
Mahkonce-----	2	0	---	High	High	Low
794:						
Clearriver-----	85	0	---	Low	Low	Moderate
Hiwood-----	7	0	---	Moderate	Low	Low
Meehan-----	5	0	---	Moderate	Low	Moderate
Faunce-----	3	0	---	Low	Low	Moderate
1002:						
Fluvaquents, frequently flooded-----	90	0	---	High	High	Low
Seelyeville-----	6	2-12	12-50	High	High	Moderate
Hapludalfs-----	2	0	---	High	Moderate	Low
Water-----	2	---	---	---	---	---
1030:						
Pits, gravel-----	75	---	---	---	---	---
Udipsamments-----	20	0	---	Low	Low	Low
Corliss-----	2	0	---	Low	Low	Low
Karlstad-----	2	0	---	Moderate	Low	Low
Hangaard-----	1	0	---	Moderate	High	Low
1031:						
Seelyeville, ponded----	90	2-12	12-50	High	High	Moderate
Cathro-----	4	2-12	12-45	High	High	Low
Dora-----	3	2-12	12-45	High	High	Moderate
Markey-----	3	2-12	12-45	High	High	Low

Table 29.--Soil Features--Continued

Map symbol and component name	Percent of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
1067:		In	In			
Fluvaquents, frequently flooded-----	60	0	---	High	High	Low
Hapludalfs-----	30	0	---	High	Moderate	Low
Seelyeville-----	5	2-12	12-50	High	High	Moderate
Water-----	5	---	---	---	---	---
1133B:						
Skime-----	85	0	---	Moderate	Low	Low
Hiwood-----	10	0	---	Moderate	Low	Low
Zippel-----	5	0	---	High	High	Low
1134:						
Borup-----	55	0	---	High	High	Low
Glyndon-----	35	0	---	High	High	Low
Augsburg, depressional-	5	0	---	High	High	Low
Skime-----	5	0	---	Moderate	Low	Low
1144:						
Strathcona, depressional-----	45	0	---	High	High	Low
Kratka, depressional---	45	0	---	Moderate	High	Low
Kratka-----	5	0	---	Moderate	High	Low
Northwood-----	5	2-8	2-12	High	High	Low
1154:						
Sax-----	90	2-8	2-12	High	High	Moderate
Wabanica-----	5	0	---	High	High	Low
Cathro-----	3	2-12	12-45	High	High	Low
Woodslake-----	2	0	---	Moderate	High	Low
1158:						
Skagen-----	85	0	---	High	High	Low
Percy-----	10	0	---	High	High	Low
Foxhome-----	5	0	---	High	Moderate	Low
1170:						
Skagen, very cobbly----	85	0	---	High	High	Low
Percy, very cobbly----	10	0	---	High	High	Low
Foxhome-----	5	0	---	High	Moderate	Low
1179B:						
Moranville-----	85	0	---	High	Moderate	Low
Baudette-----	5	0	---	High	Moderate	Low

Table 29.--Soil Features--Continued

Map symbol and component name	Percent of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
1179B:		In	In			
Hiwood-----	5	0	---	Moderate	Low	Low
Spooner-----	5	0	---	High	High	Low
1181:						
Rosewood-----	50	0	---	Moderate	High	Low
Ulen-----	40	0	---	Moderate	Low	Low
Redby-----	5	0	---	Moderate	Low	Low
Deerwood-----	3	2-8	2-12	Moderate	High	Low
Syrene-----	2	0	---	Moderate	High	Low
1182:						
Warroad-----	85	0	---	High	High	Low
Wabanica-----	7	0	---	High	High	Low
Enstrom-----	5	0	---	Moderate	Moderate	Low
Sax-----	3	2-8	2-12	High	High	Moderate
1187:						
Dora, ponded-----	90	2-12	12-45	High	High	Low
Seelyeville, ponded----	4	2-12	12-50	High	High	Moderate
Wildwood-----	4	2-8	2-12	High	High	Low
Boash-----	2	0	---	High	High	Low
1191:						
Sahkahtay-----	85	0	---	Moderate	High	Low
Cormant-----	5	0	---	Moderate	High	Low
Deerwood-----	5	2-8	2-12	Moderate	High	Low
Karlstad-----	3	0	---	Moderate	Low	Low
Redby-----	2	0	---	Moderate	Low	Low
1206:						
Cormant-----	55	0	---	Moderate	High	Low
Redby-----	35	0	---	Moderate	Low	Low
Hiwood-----	5	0	---	Moderate	Low	Low
Leafriver-----	5	2-8	2-12	High	High	High
1214:						
Mustinka-----	90	0	---	High	High	Low
Espelie-----	4	0	---	High	High	Low
Wildwood-----	4	2-8	2-12	High	High	Low
Dalbo-----	2	0	---	High	High	Moderate

Table 29.--Soil Features--Continued

Map symbol and component name	Percent of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
1274B:		In	In			
Redby-----	40	0	---	Moderate	Low	Low
Hiwood-----	30	0	---	Moderate	Low	Low
Leafriver, wooded-----	15	2-8	2-12	High	High	High
Clearriver-----	5	0	---	Low	Low	Moderate
Cormant-----	5	0	---	Moderate	High	Low
Zimmerman-----	5	0	---	Low	Low	High
1298:						
Borup-----	90	0	---	High	High	Low
Augsburg, depressional-	3	0	---	High	High	Low
Glyndon-----	3	0	---	High	High	Low
Sago-----	2	2-8	2-12	High	High	Moderate
Skime-----	2	0	---	Moderate	Low	Low
1302:						
Foldahl-----	85	0	---	High	Moderate	Low
Kratka-----	10	0	---	Moderate	High	Low
Foxhome-----	5	0	---	High	Moderate	Low
1304:						
Glyndon-----	85	0	---	High	High	Low
Borup-----	10	0	---	High	High	Low
Skime-----	5	0	---	Moderate	Low	Low
1305:						
Hilaire-----	85	0	---	High	Moderate	Low
Espelie-----	11	0	---	High	High	Low
Grano-----	2	0	---	High	High	Low
Redby-----	2	0	---	Moderate	Low	Low
1314:						
Tacoosh-----	90	2-12	6-45	High	High	Moderate
Rifle-----	8	2-12	6-45	High	High	Low
Sax-----	2	2-8	2-12	High	High	Moderate
1316:						
Wheatville-----	85	0	---	High	High	Low
Augsburg-----	13	0	---	High	High	Low
Grano-----	2	0	---	High	High	Low

Table 29.--Soil Features--Continued

Map symbol and component name	Percent of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
1326:		In	In			
Augsburg, depressional-	45	0	---	High	High	Low
Wabanica, depressional-	45	0	---	High	High	Low
Sax-----	6	2-8	2-12	High	High	Moderate
Espelie-----	2	0	---	High	High	Low
Zippel-----	2	0	---	High	High	Low
1327B:						
Karlstad-----	65	0	---	Moderate	Low	Low
Marquette-----	25	0	---	Low	Low	Low
Sahkahtay-----	7	0	---	Moderate	High	Low
Redby-----	3	0	---	Moderate	Low	Low
1328:						
Northwood, wooded-----	90	2-8	2-12	High	High	Low
Berner, wooded-----	5	2-12	12-45	High	High	Moderate
Grygla-----	5	0	---	High	High	Low
1333:						
Dora, wooded-----	90	2-12	12-45	High	High	Moderate
Lupton-----	4	2-12	12-50	High	High	Low
Wildwood-----	4	2-8	2-12	High	High	Low
Auganaush-----	2	0	---	High	High	Moderate
1356:						
Water, miscellaneous.						
1399B:						
Two Inlets-----	85	0	---	Low	Low	Low
Wurtsmith-----	6	0	---	Low	Low	High
Zimmerman-----	6	0	---	Low	Low	High
Meehan-----	3	0	---	Moderate	Low	Moderate
1401:						
Grygla, depressional---	90	0	---	High	High	Low
Northwood, wooded-----	5	2-8	2-12	High	High	Low
Chilgren-----	3	0	---	High	High	Low
Grygla-----	2	0	---	High	High	Low
1402:						
Leafriver, wooded-----	90	2-8	2-12	High	High	High
Cormant-----	4	0	---	Moderate	High	Low

Table 29.--Soil Features--Continued

Map symbol and component name	Percent of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
1402:		In	In			
Tawas-----	4	2-12	12-45	High	High	Moderate
Redby-----	2	0	---	Moderate	Low	Low
1404:						
Berner, wooded-----	90	2-12	12-45	High	High	Moderate
Lupton-----	4	2-12	12-50	High	High	Low
Northwood, wooded-----	4	2-8	2-12	High	High	Low
Grygla-----	2	0	---	High	High	Low
1405:						
Lallie-----	90	0	---	High	High	High
Sax-----	7	2-8	2-12	High	High	Moderate
Wabanica-----	3	0	---	High	High	Low
1414:						
Nereson, very cobbly---	85	0	---	High	Moderate	Low
Percy, very cobbly----	10	0	---	High	High	Low
Pelan-----	3	0	---	Moderate	Moderate	Low
Foxhome-----	2	0	---	High	Moderate	Low
1428:						
Karlsruhe-----	85	0	---	Moderate	High	Low
Syrene-----	10	0	---	Moderate	High	Low
Ulen-----	5	0	---	Moderate	Low	Low
1444:						
Wurtsmith-----	85	0	---	Low	Low	High
Meehan-----	10	0	---	Moderate	Low	Moderate
Clearriver-----	2	0	---	Low	Low	Moderate
Two Inlets-----	2	0	---	Low	Low	Low
Cormant-----	1	0	---	Moderate	High	Low
1448:						
Grano-----	90	0	---	High	High	Low
Percy-----	5	0	---	High	High	Low
Augsburg-----	3	0	---	High	High	Low
Woodslake-----	2	0	---	Moderate	High	Low
1449:						
Grano-----	90	0	---	High	High	Low
Percy-----	5	0	---	High	High	Low

Table 29.--Soil Features--Continued

Map symbol and component name	Percent of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
1449:		In	In			
Augsburg-----	3	0	---	High	High	Low
Woodslake-----	2	0	---	Moderate	High	Low
1807:						
Cathro, ponded-----	90	2-12	12-45	High	High	Low
Haug-----	4	2-8	2-12	High	High	Low
Seelyeville, ponded----	4	2-12	12-50	High	High	Moderate
Percy-----	2	0	---	High	High	Low
1808:						
Markey, ponded-----	90	2-12	12-45	High	High	Low
Leafriver-----	4	2-8	2-12	High	High	High
Seelyeville, ponded----	4	2-12	12-50	High	High	Moderate
Cormant-----	2	0	---	Moderate	High	Low
1918:						
Croke-----	85	0	---	High	High	Low
Augsburg-----	13	0	---	High	High	Low
Grano-----	2	0	---	High	High	Low
1923B:						
Garnes, very stony----	85	0	---	High	Moderate	Low
Chilgren-----	10	0	---	High	High	Low
Eckvoll-----	3	0	---	High	Moderate	Low
Pelan-----	2	0	---	Moderate	Moderate	Low
1984:						
Leafriver-----	90	2-8	2-12	High	High	High
Cormant-----	5	0	---	Moderate	High	Low
Markey-----	3	2-12	12-45	High	High	Low
Redby-----	2	0	---	Moderate	Low	Low
W: Water.						

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Glossary

Ablation till. Loose, permeable till deposited during the final downwasting of glacial ice. Lenses of crudely sorted sand and gravel are common.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in

inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Basal till. Compact glacial till deposited beneath the ice.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope. A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Beach deposits. Material, such as sand and gravel, that is generally laid down parallel to an active or relict shoreline of a postglacial or glacial lake.

Beach ridge. A low, essentially continuous mound of beach or beach-and-dune material heaped up by the action of waves and currents on the backshore of a beach, beyond the present limit of storm waves or the reach of ordinary tides, and occurring singly or as one of a series of approximately parallel deposits. The ridges are roughly parallel to the shoreline and represent successive positions of an advancing shoreline.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.

Bog. Waterlogged, spongy ground consisting primarily of mosses and containing acidic, decaying vegetation, such as sphagnum, sedges, and heaths, that develops into peat.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to

soils, is synonymous with base-exchange capacity but is more precise in meaning.

Catsteps. Very small, irregular terraces on steep hillsides, especially in pasture, formed by the trampling of cattle or the slippage of saturated soil.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a chanter.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning

or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coprogenous earth (sedimentary peat). Fecal material deposited in water by aquatic organisms.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Delta. A body of alluvium having a surface that is nearly flat and fan shaped; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Depression. Any relatively sunken part of the earth's surface; especially a low-lying area surrounded by higher ground. A closed depression has no natural outlet for surface drainage. An open depression has a natural outlet for surface drainage.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and*

very poorly drained. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. Relatively small, linear depressions that, at some time, move concentrated water and either do not have a defined channel or have only a small defined channel.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact glacial till. The longer axis is parallel to the path of the glacier and commonly has a blunt nose pointing in the direction from which the ice approached.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Esker. A narrow, winding ridge of stratified gravelly and sandy drift deposited by a stream flowing in a tunnel beneath a glacier.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Excess salt (in tables). Excess water-soluble salts in the soil restrict the growth of most plants.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fast intake (in tables). The rapid movement of water into the soil.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity*, *normal moisture capacity*, or *capillary capacity*.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

- Flagstone.** A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.
- Flood plain.** A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.
- Fluvial.** Of or pertaining to rivers; produced by river action, as a fluvial plain.
- Footslope.** The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).
- Forb.** Any herbaceous plant not a grass or a sedge.
- Forest cover.** All trees and other woody plants (underbrush) covering the ground in a forest.
- Forest type.** A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.
- Fragipan.** A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.
- Frost action** (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.
- Genesis, soil.** The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.
- Geomorphology.** The science that treats the general configuration of the earth's surface; specifically the study of the classification, description, nature, origin, and development of landforms and their relationships to underlying structures, and the history of geologic changes as recorded by these surface features. The term is especially applied to the genetic interpretation of landforms.
- Glacial drift.** Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.
- Glacial outwash.** Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.
- Glaciofluvial deposits.** Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.
- Glaciolacustrine deposits.** Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated.
- Gleyed soil.** Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.
- Graded strip cropping.** Growing crops in strips that grade toward a protected waterway.
- Grassed waterway.** A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.
- Gravel.** Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.
- Gravelly soil material.** Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.
- Green manure crop** (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.
- Ground water.** Water filling all the unblocked pores of the material below the water table.
- Gully.** A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.
- Hard bedrock.** Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.
- Hardpan.** A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.
- Head slope.** A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.
- Hemic soil material (mucky peat).** Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

Herbaceous peat. An accumulation of organic material, decomposed to some degree, that is predominantly the remains of sedges, reeds, cattails, and other herbaceous plants.

High-chroma zones. Zones having chroma of 3 or more. Typical color in areas of iron concentrations.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the

material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Ice-walled lake plain. A relict surface marking the floor of an extinct lake basin that was formed on solid ground and surrounded by stagnant ice in a stable or unstable superglacial environment on stagnation moraines. As the ice melted, the lake plain became perched above the adjacent landscape. The lake plain is well sorted, generally fine textured, stratified deposits.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the

soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron concentrations. High-chroma zones having a high content of iron and manganese oxide because of chemical oxidation and accumulation, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic concentration.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made

by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame. An irregular, short ridge or hill of stratified glacial drift.

Kame moraine. An end moraine that contains numerous kames. A group of kames along the front of a stagnant glacier, commonly comprising the slumped remnants of a formerly continuous outwash plain built up over the foot of rapidly wasting or stagnant ice.

Karst (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

Knoll. A small, low, rounded hill rising above adjacent landforms.

K_{sat} . Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake bed. The bottom of a lake; a lake basin.

Lake plain. A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine-textured, stratified deposits, commonly containing varves.

Lakeshore. A narrow strip of land in contact with or bordering a lake; especially the beach of a lake.

Lake terrace. A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

Lamella. A thin (commonly less than 1 cm thick), discontinuous or continuous, generally horizontal layer of fine material (especially clay and iron oxides) that has been pedogenically concentrated (illuviated) within a coarser textured eluviated layer several centimeters to several decimeters thick.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $1/3$ - or $1/10$ -bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low-chroma zones. Zones having chroma of 2 or less. Typical color in areas of iron depletions.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic material to the soil.

Low strength. The soil is not strong enough to support loads.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and

low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mucky peat. Unconsolidated soil material consisting primarily of organic matter that is in an intermediate stage of decomposition such that a significant part of the material can be recognized and a significant part of the material cannot be recognized.

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds

making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10

square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Percolates slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitted outwash plain. An outwash plain marked by many irregular depressions, such as kettles, shallow pits, and potholes, that formed by melting of incorporated ice masses. Many examples can be observed in Wisconsin and Minnesota.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed

depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been

removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Rise. A slight increase in elevation of the land surface, typically with a broad summit and gently sloping sides.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a

soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building

foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on glacial outwash, or on a glaciolacustrine deposit.

Slow intake (in tables). The slow movement of water into the soil.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stagnation moraine. A body of drift released by the melting of a glacier that ceased flowing. Commonly (but not always) occurs near ice margins; composed of till, ice-contact stratified drift, and small areas of glacial lake sediment. Typical landforms are knob-and-kettle topography, locally including ice-walled lake plains.

Stone line. A concentration of rock fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Strippcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil

particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsidence. The potential decrease in surface elevation as a result of the drainage of wet soils that have organic layers or semifluid mineral layers. Subsidence, as a result of drainage, is attributed to (1) shrinkage from drying, (2) consolidation because of the loss of ground-water buoyancy, (3) compaction from tillage or manipulation, (4) wind erosion, (5) burning, and (6) biochemical oxidation.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Swale. A slight depression in the midst of generally level land. A shallow depression in an undulating ground moraine caused by uneven glacial deposition.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only

when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. A belt of thick glacial drift that generally marks the termination of important glacial advances.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand*, *loamy sand*, *sandy loam*, *loam*, *silt loam*, *silt*, *sandy clay loam*, *clay loam*, *silty clay loam*, *sandy clay*, *silty clay*, and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till. Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Till plain. An extensive area of nearly level to undulating soils underlain by glacial till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an oven-dry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

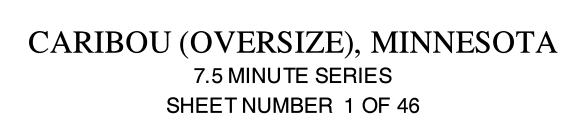
Windthrow. The uprooting and tipping over of trees by the wind.

Woody peat. An accumulation of organic material that is predominantly composed of trees, shrubs, and other woody plants.

ROSEAU COUNTY, MINNESOTA
MN135

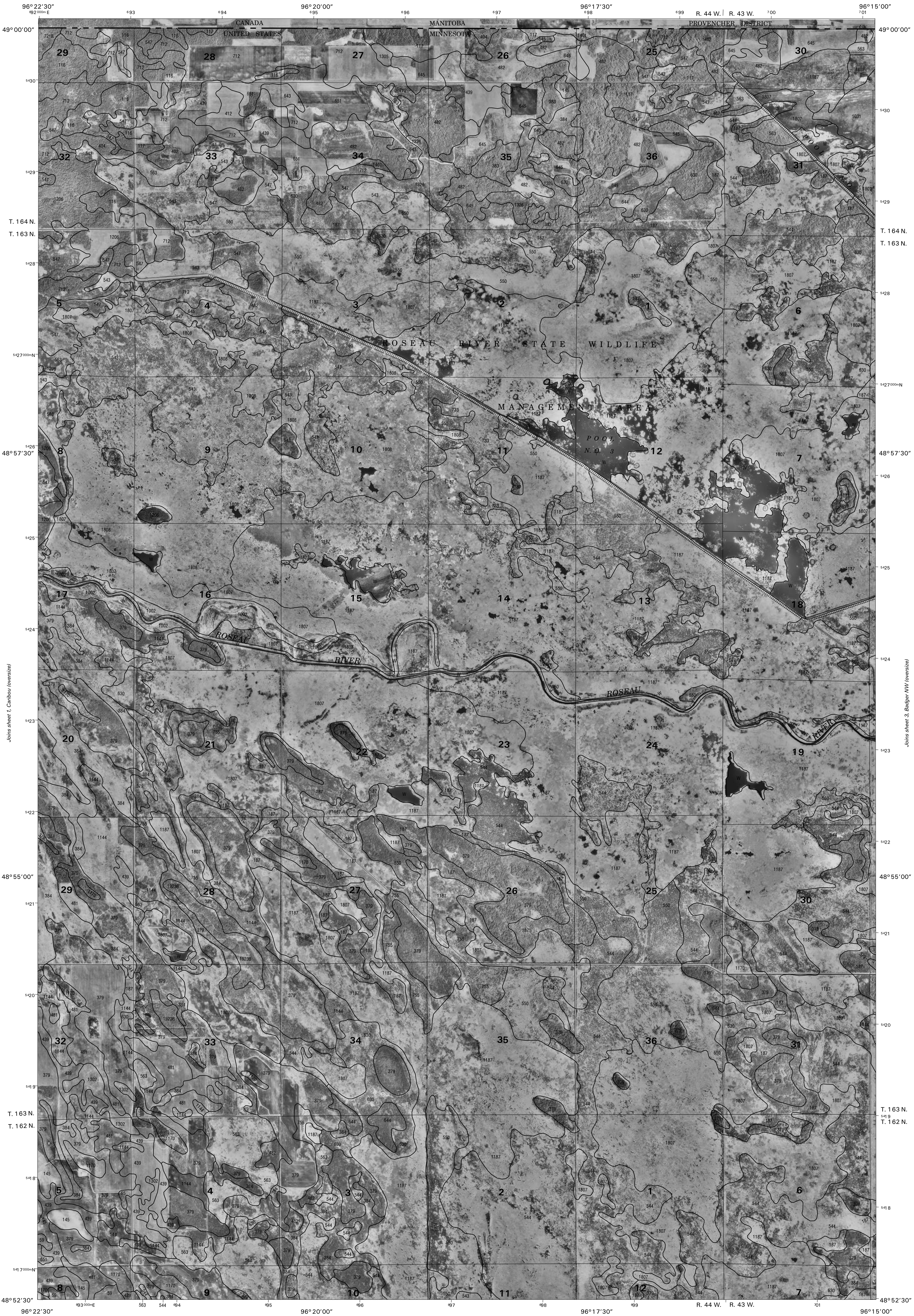


ROSEAU COUNTY, MINNESOTA
CARIBOU (OVERSIZE) QUADRANGLE
SHEET NUMBER 1 OF 46



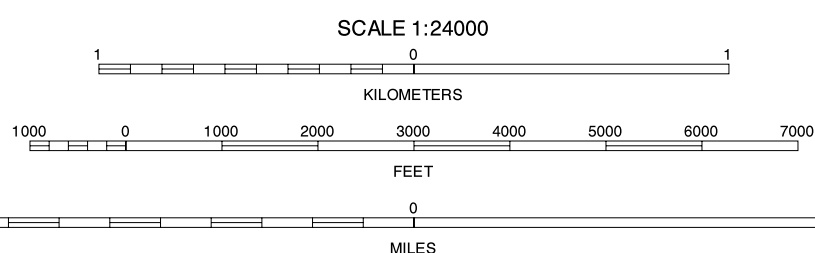
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ROSEAU COUNTY, MINNESOTA
CARIBOU NE (OVERSIZE) QUADRANGLE
SHEET NUMBER 2 OF 46



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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 14. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



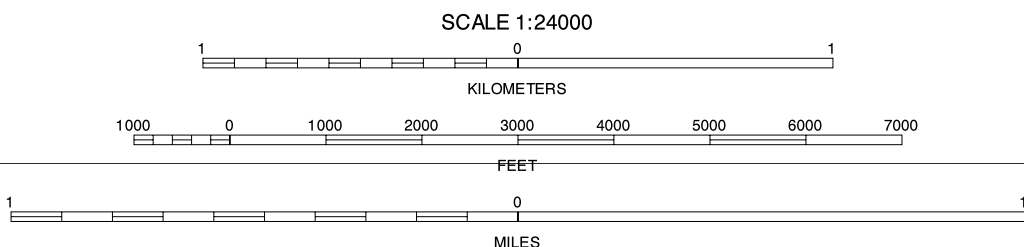
QUADRANGLE LOCATION

CARIBOU NE (OVERSIZE), MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 2 OF 46

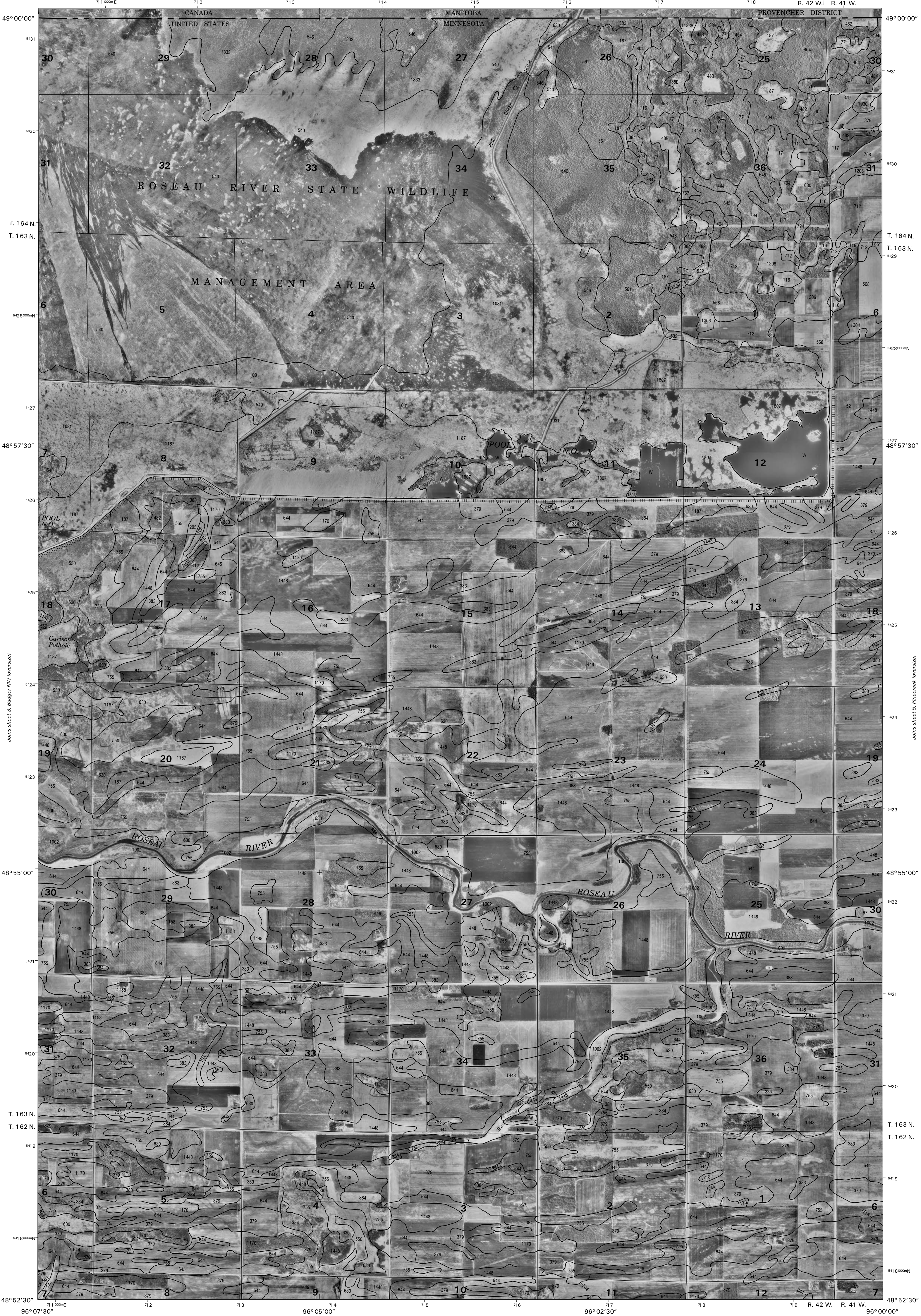


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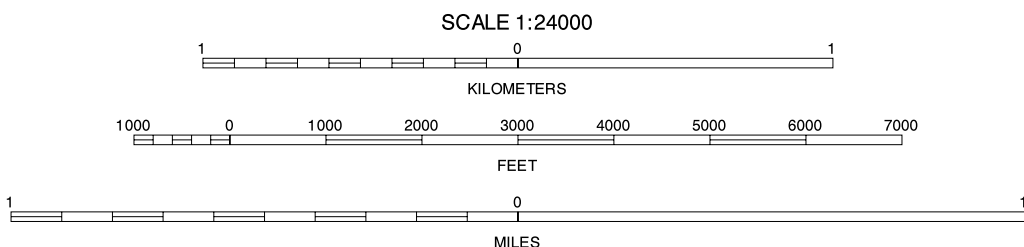


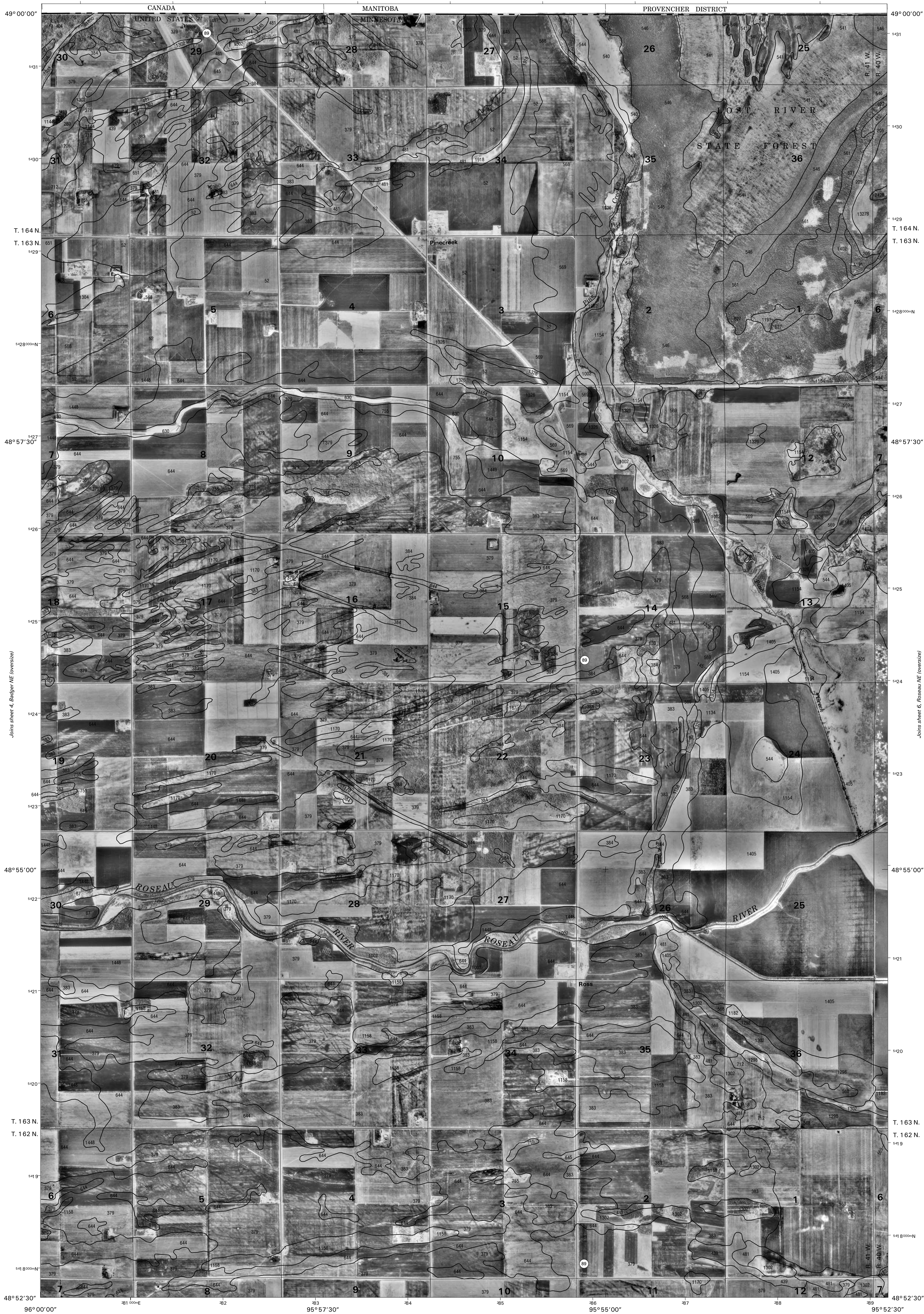
BADGER NW (OVERSIZE), MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 3 OF 46



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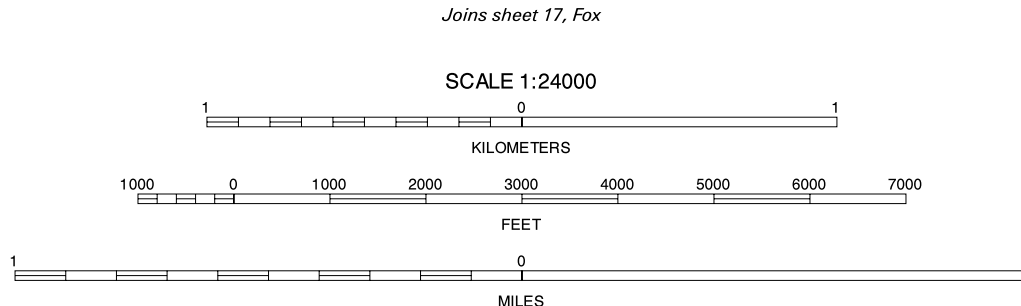
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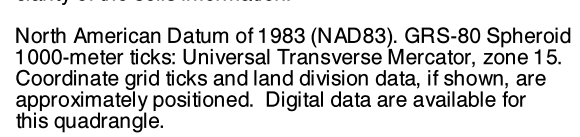
North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

PINECREEK (OVERSIZE), MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 5 OF 46

ROSEAU COUNTY, MINNESOTA
ROSEAU NE (OVERSIZE) QUADRANGLE
SHEET NUMBER 6 OF 46



SCALE 1:24000

The image displays three horizontal graphical scales. The top scale is for Kilometers, with a total length of 7000 units and major tick marks every 1000 units. The middle scale is for Feet, with a total length of 7000 units and major tick marks every 1000 units. The bottom scale is for Miles, with a total length of 7000 units and major tick marks every 1000 units. Each scale has a central zero point and is flanked by 1 and 0 markers. The scales are labeled 'KILOMETERS', 'FEET', and 'MILES' respectively.

1 0 1

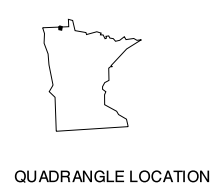
KILOMETERS

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FEET

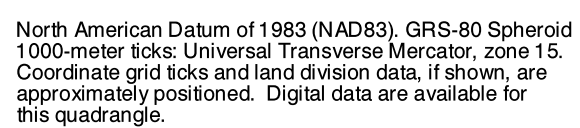
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MILES



ROSEAU NE (OVERSIZE), MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 6 OF 46

ROSEAU COUNTY, MINNESOTA
SALOL NW (OVERSIZE) QUADRANGLE
SHEET NUMBER 7 OF 46



SCALE 1:24000

The image shows three horizontal scale bars. The top bar is labeled 'KILOMETERS' and has a scale from 0 to 7000 with major ticks every 1000 units. The middle bar is labeled 'FEET' and has a scale from 0 to 7000 with major ticks every 1000 units. The bottom bar is labeled 'MILES' and has a scale from 0 to 7000 with major ticks every 1000 units. Each bar has a '1' at the far left and a '0' at the far right, indicating the scale is reversed. The scale is 1:24000.

1 0 1

KILOMETERS

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FEET

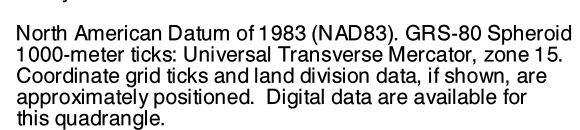
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MILES



SALOL NW (OVERSIZE), MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 7 OF 46

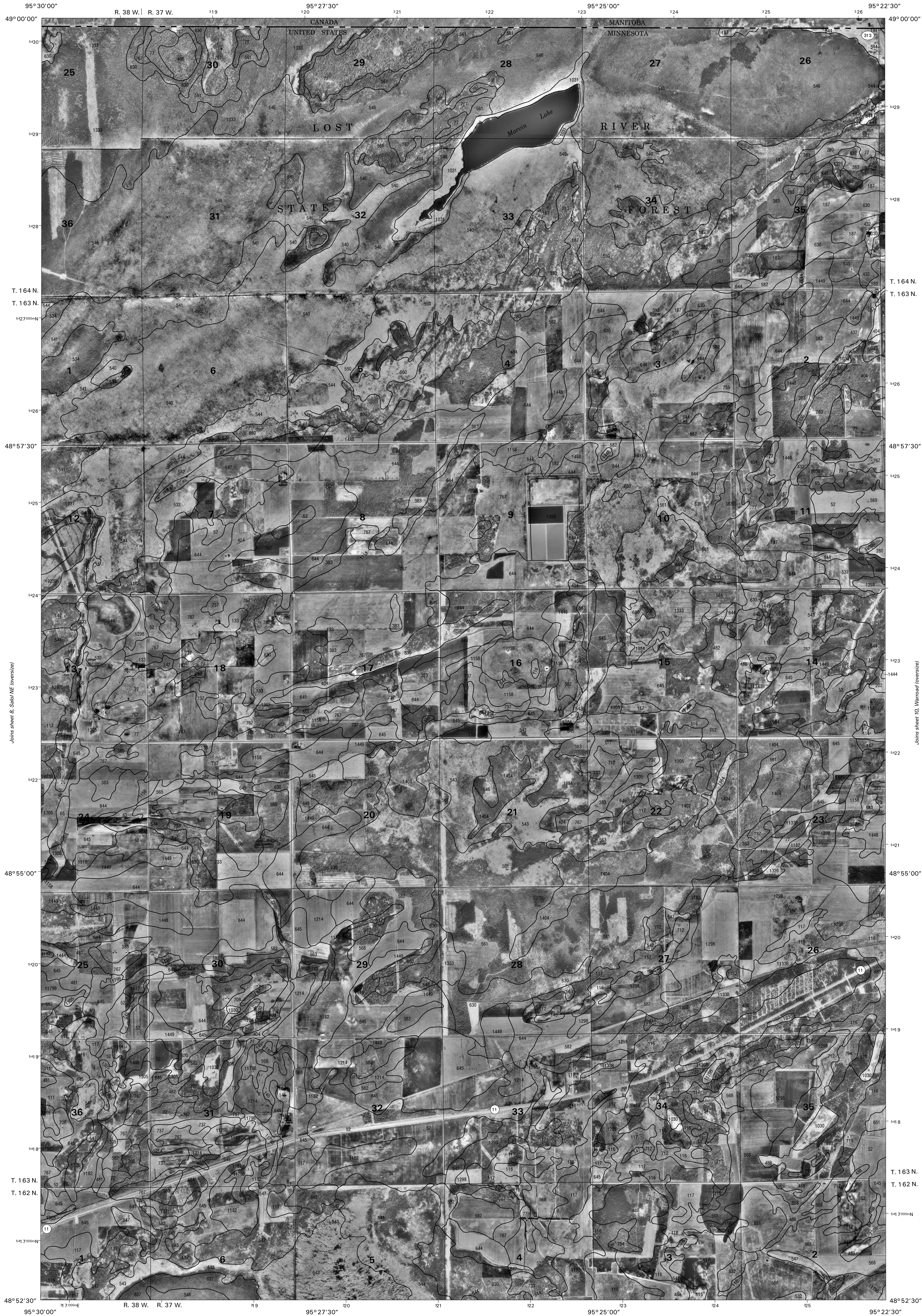
ROSEAU COUNTY, MINNESOTA
SALOL NE (OVERSIZE) QUADRANGLE
SHEET NUMBER 8 OF 46



SALOL NE (OVERSIZE), MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 8 OF 46

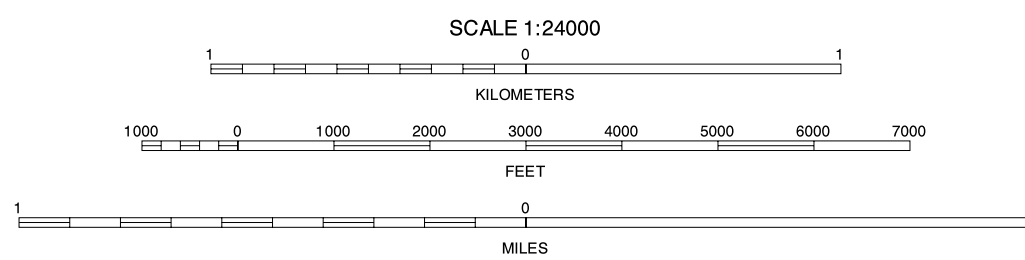
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ROSEAU COUNTY, MINNESOTA
WARROAD NW (OVERSIZE) QUADRANGLE
SHEET NUMBER 9 OF 46



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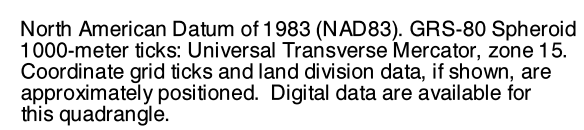
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

WARROAD NW (OVERSIZE), MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 9 OF 46

ROSEAU COUNTY, MINNESOTA
WARROAD (OVERSIZE) QUADRANGLE
SHEET NUMBER 10 OF 46



SCALE 1:24000

1 0 1

KILOMETERS

1000 0 1000 2000 3000 4000 5000 6000 7000

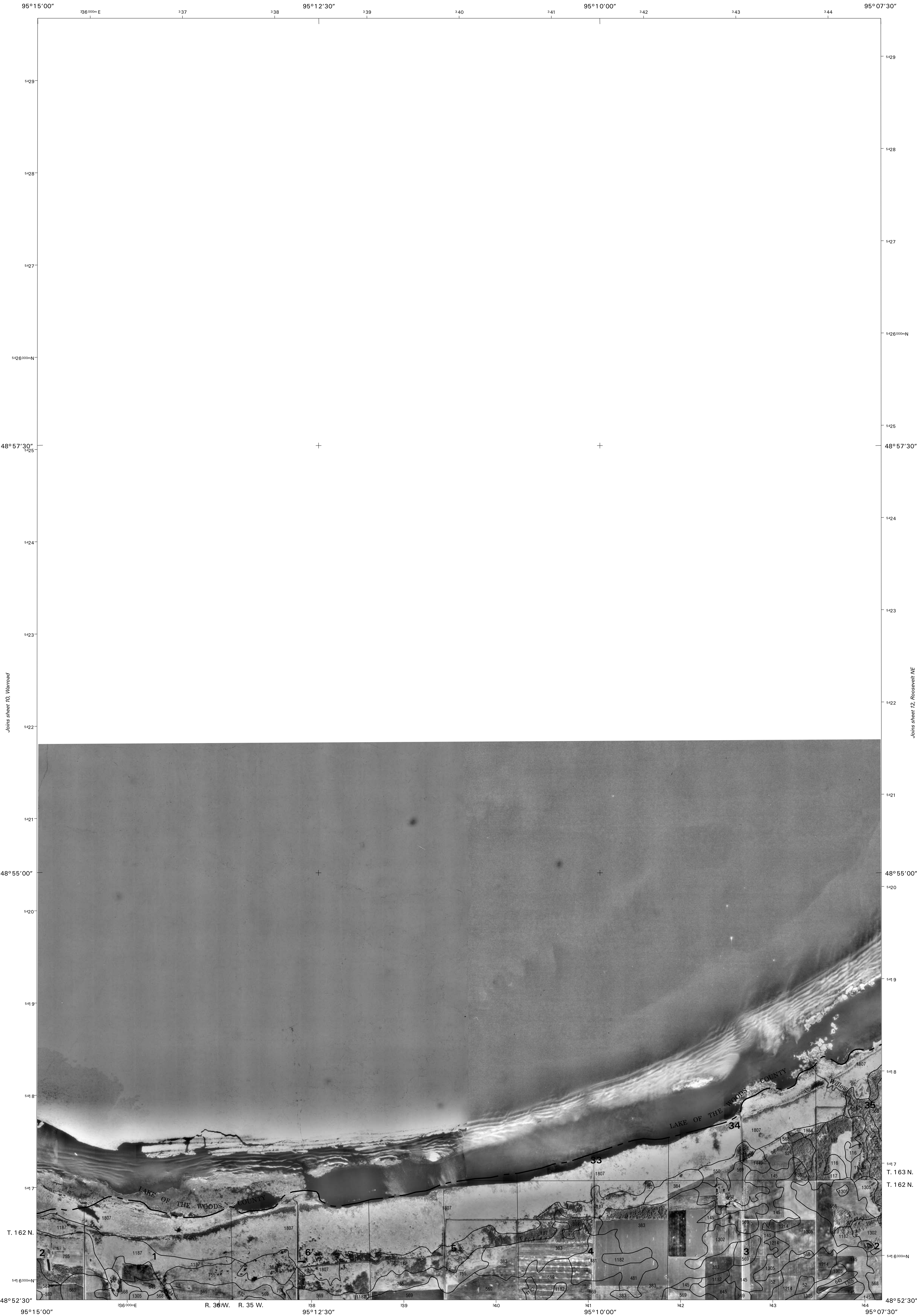
FEET

0

MILES



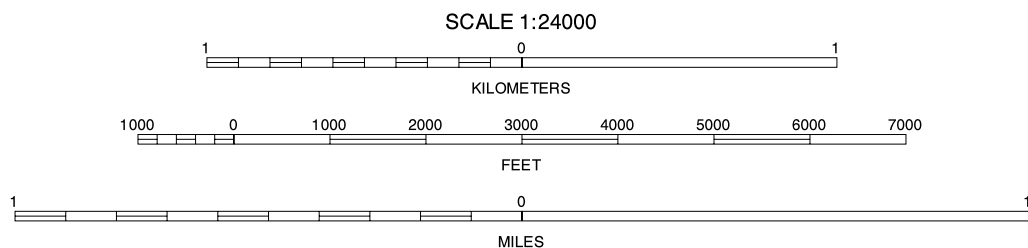
WARROAD (OVERSIZE), MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 10 OF 46



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NORTH



ROOSEVELT NW, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 11 OF 46

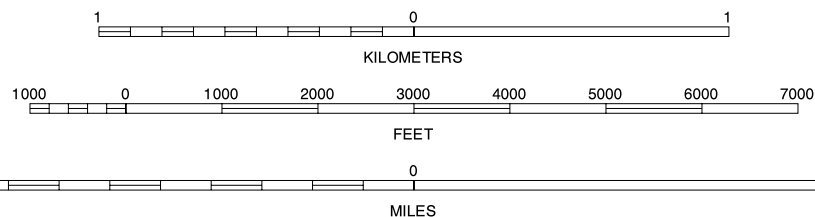


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Joins sheet 24, Roosevelt

SCALE 1:24000

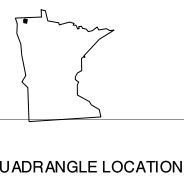
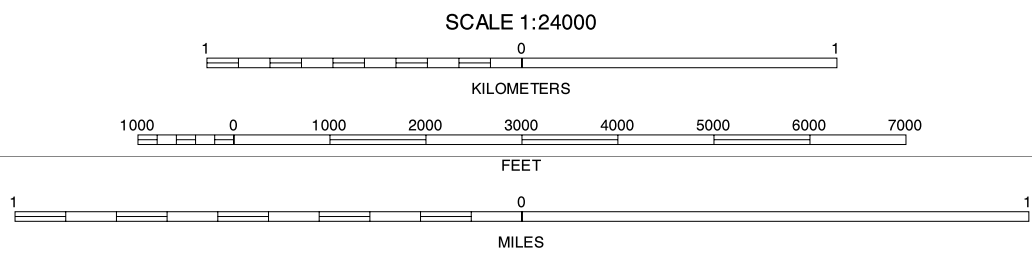


ROOSEVELT NE, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 12 OF 46



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JUNEBERRY RIDGE, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 13 OF 46

ROSEAU COUNTY, MINNESOTA
LEO QUADRANGLE
SHEET NUMBER 14 OF 46

North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 14.
Coordinate grid ticks and land division data, if shown, are
approximately positioned. Digital data are available for
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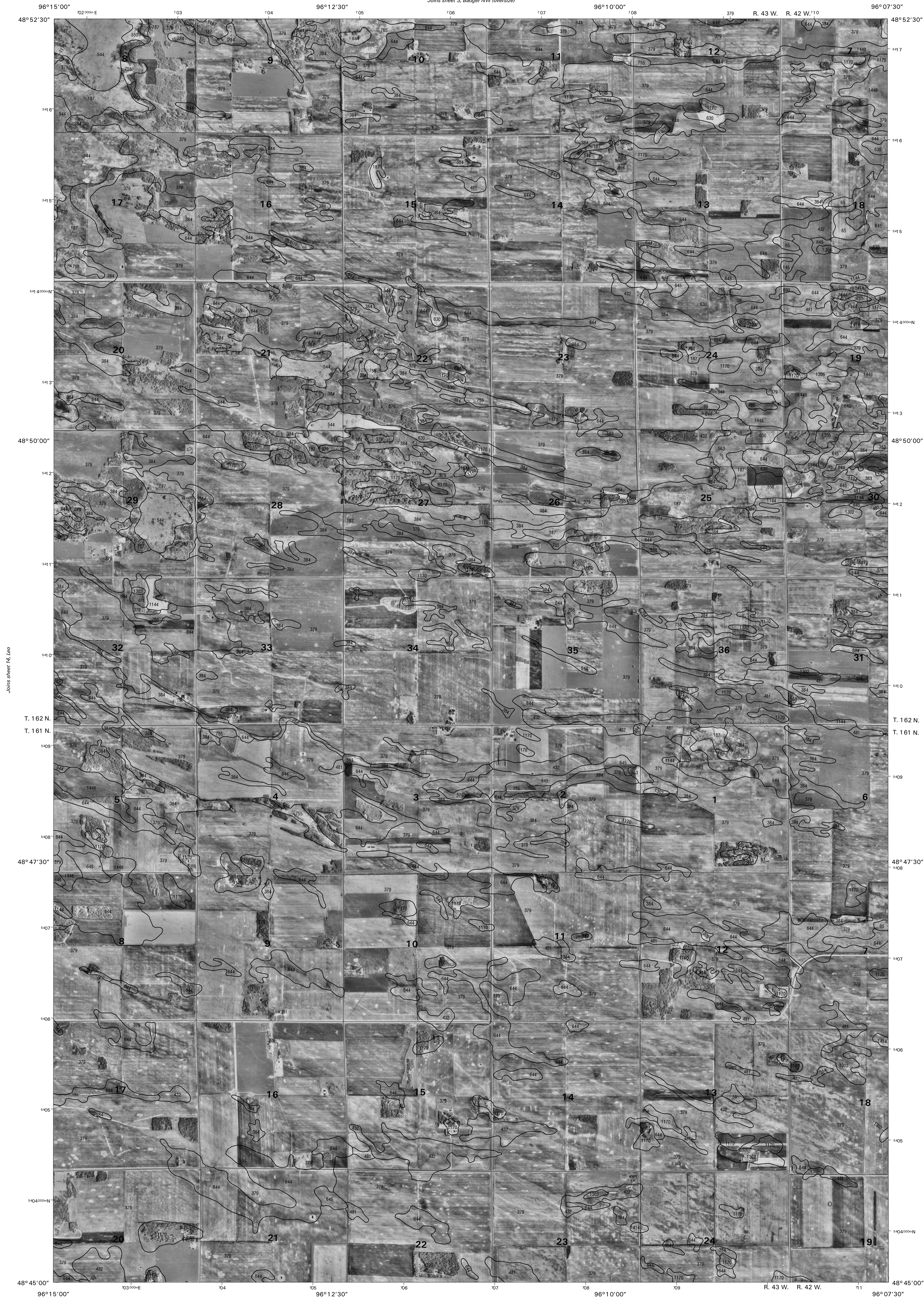
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LEO, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 14 OF 46

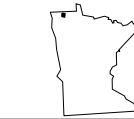
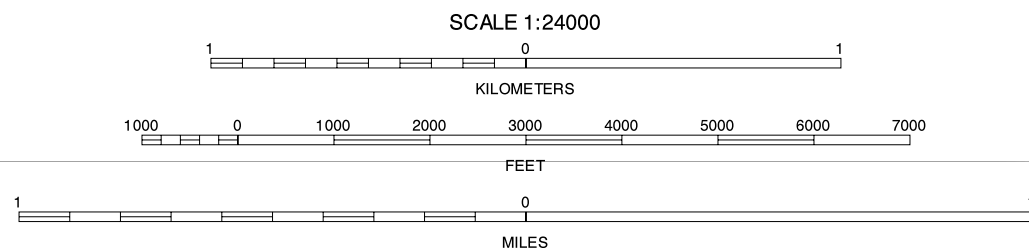
UNITED STATES
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ROSEAU COUNTY, MINNESOTA
HAUG QUADRANGLE
SHEET NUMBER 15 OF 46



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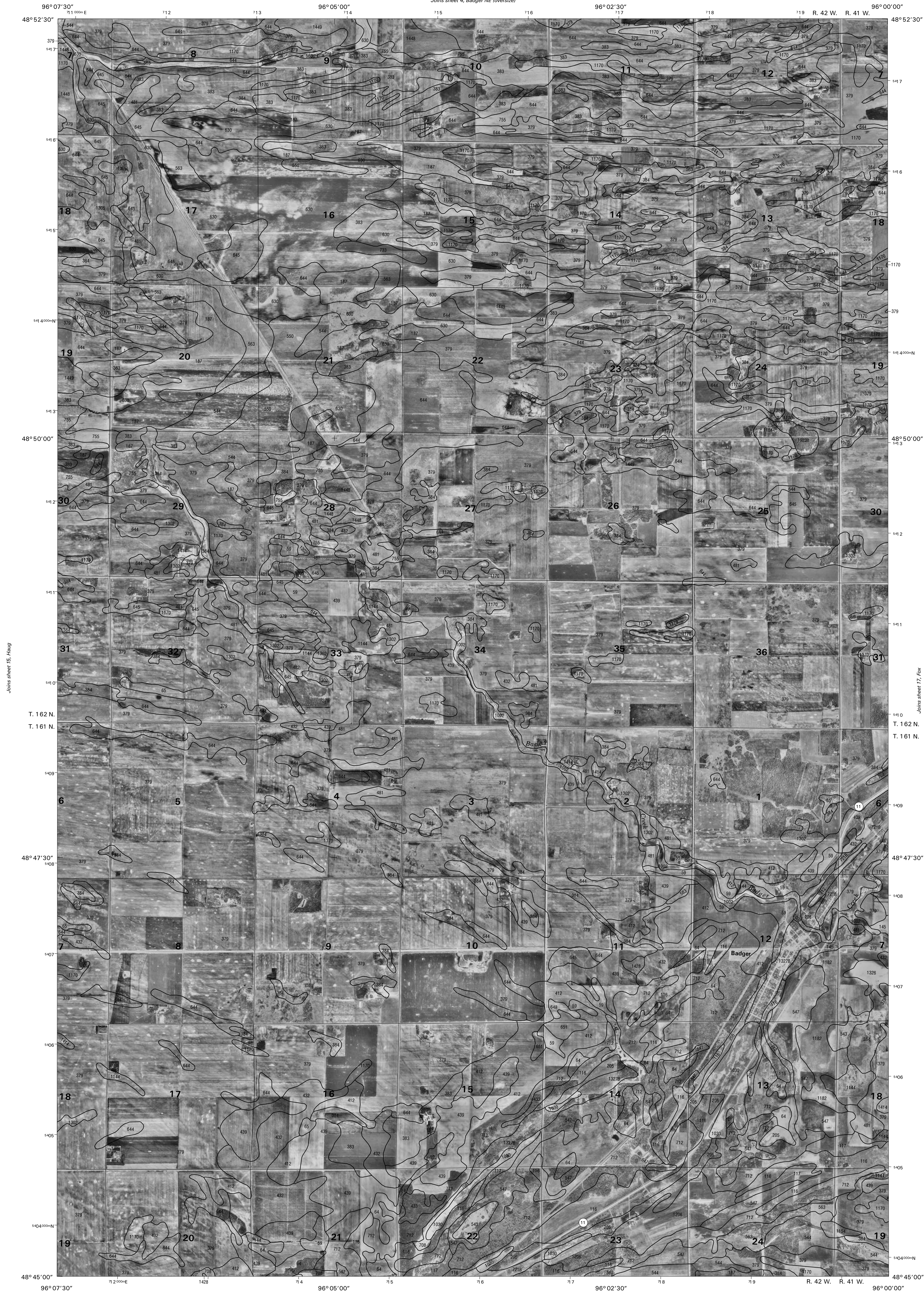


QUADRANGLE LOCATION

HAUG, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 15 OF 46

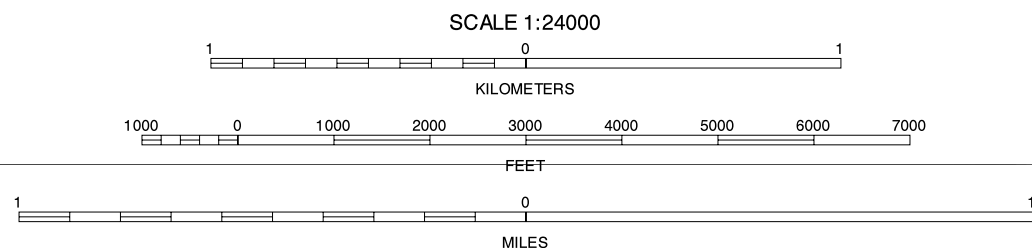
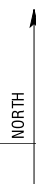
UNITED STATES
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ROSEAU COUNTY, MINNESOTA
BADGER QUADRANGLE
SHEET NUMBER 16 OF 46



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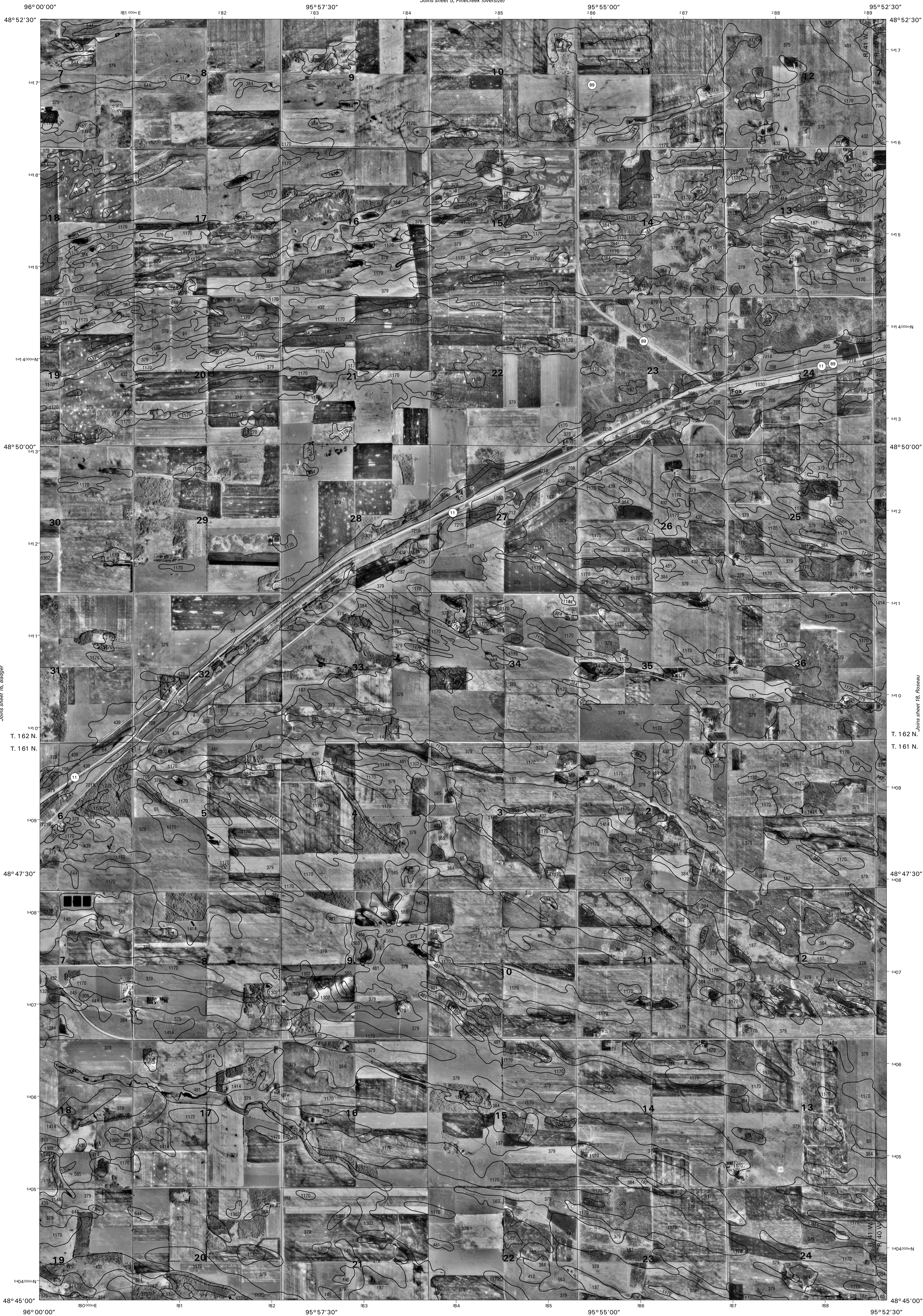


QUADRANGLE LOCATION

BADGER, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 16 OF 46

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ROSEAU COUNTY, MINNESOTA
FOX QUADRANGLE
SHEET NUMBER 17 OF 46

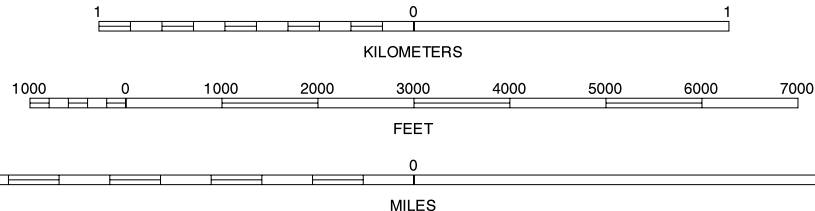


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Join sheet 29, Thief Lake NW

SCALE 1:24000



QUADRANGLE LOCATION

FOX, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 17 OF 46

ROSEAU COUNTY, MINNESOTA
ROSEAU QUADRANGLE
SHEET NUMBER 18 OF 46

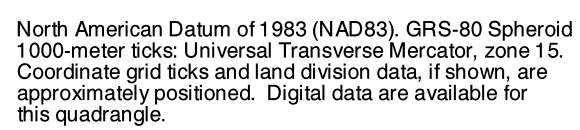
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1000-meter ticks: Universal Transverse Mercator, zone 15.
Coordinate grid ticks and land division data, if shown, are
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QUADRANGLE LOCATION

ROSEAU, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 18 OF 46

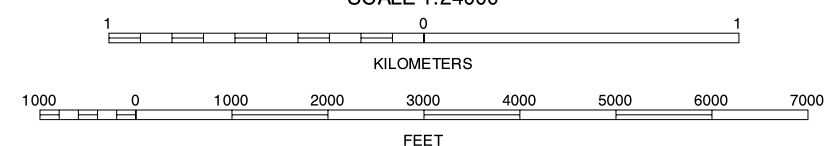
ROSEAU COUNTY, MINNESOTA
MALUNG QUADRANGLE
SHEET NUMBER 19 OF 46

Joins sheet 7, Salol NW (oversize)



Joins sheet 31, Wannaska

SCALE 1:24000



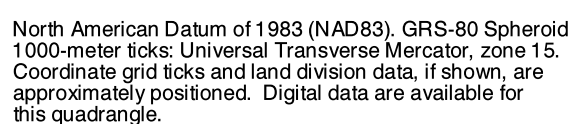
5.11



QUADRANGLE LOCATION

MALUNG, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 19 OF 46

ROSEAU COUNTY, MINNESOTA
SALOL QUADRANGLE
SHEET NUMBER 20 OF 46



SCALE 1:24000

KILOMETERS

FEET

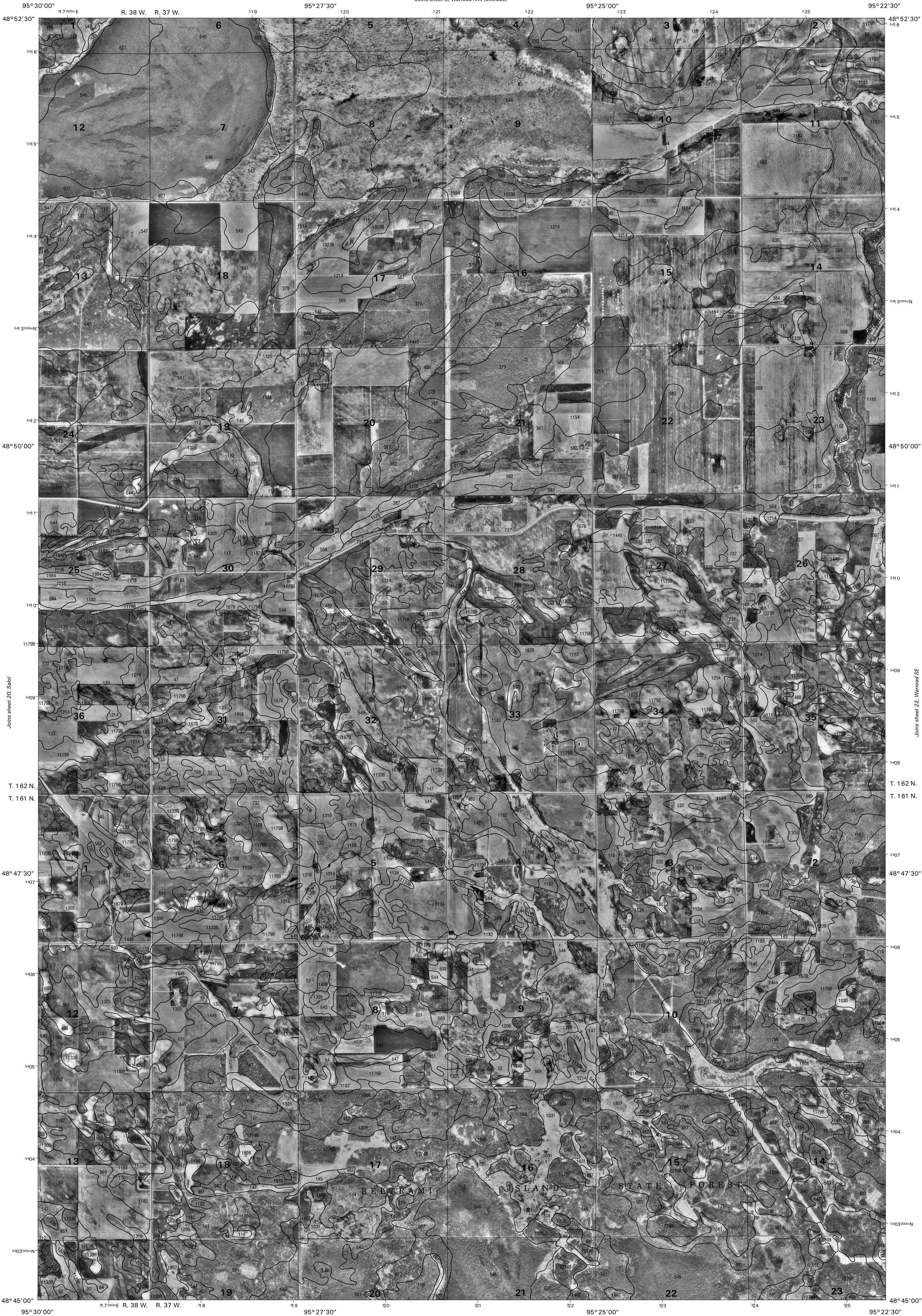
MILES



SALOL, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 20 OF 46

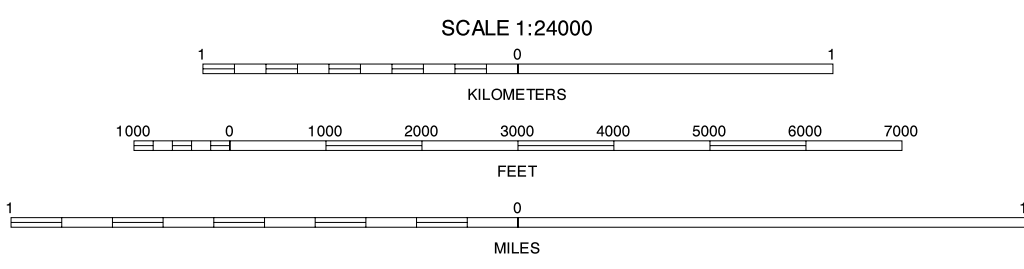
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ROSEAU COUNTY, MINNESOTA
WARROAD SW QUADRANGLE
SHEET NUMBER 21 OF 46



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey, Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

WARROAD SW, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 21 OF 46

ROSEAU COUNTY, MINNESOTA
WARROAD SE QUADRANGLE
SHEET NUMBER 22 OF 46

North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 15.
Coordinate grid ticks and land division data, if shown, are
approximately positioned. Digital data are available for
this quadrangle.

The image displays three horizontal scale bars used for measurement. The top bar is labeled 'KILOMETERS' and has a scale from 0 to 7000, with major tick marks every 1000 units. Above this bar is a smaller scale bar labeled 'SCALE 1:24000' with markings for 1, 0, and 1. The middle bar is labeled 'FEET' and has a scale from 0 to 7000, with major tick marks every 1000 units. The bottom bar is labeled 'MILES' and has a scale from 0 to 7000, with major tick marks every 1000 units.



WARROAD SE, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 22 OF 46

ROSEAU COUNTY, MINNESOTA
SWIFT QUADRANGLE
SHEET NUMBER 23 OF 46

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

SCALE 1:24000

1 0 1

KILOMETERS

1000 0 1000 2000 3000 4000 5000 6000 7000

FEET

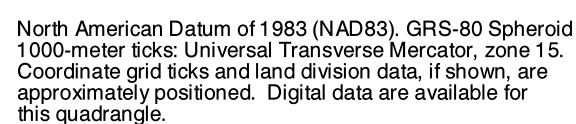
0

MILES



SWIFT, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 23 OF 46

ROSEAU COUNTY, MINNESOTA
ROOSEVELT QUADRANGLE
SHEET NUMBER 24 OF 46



SCALE 1:24000

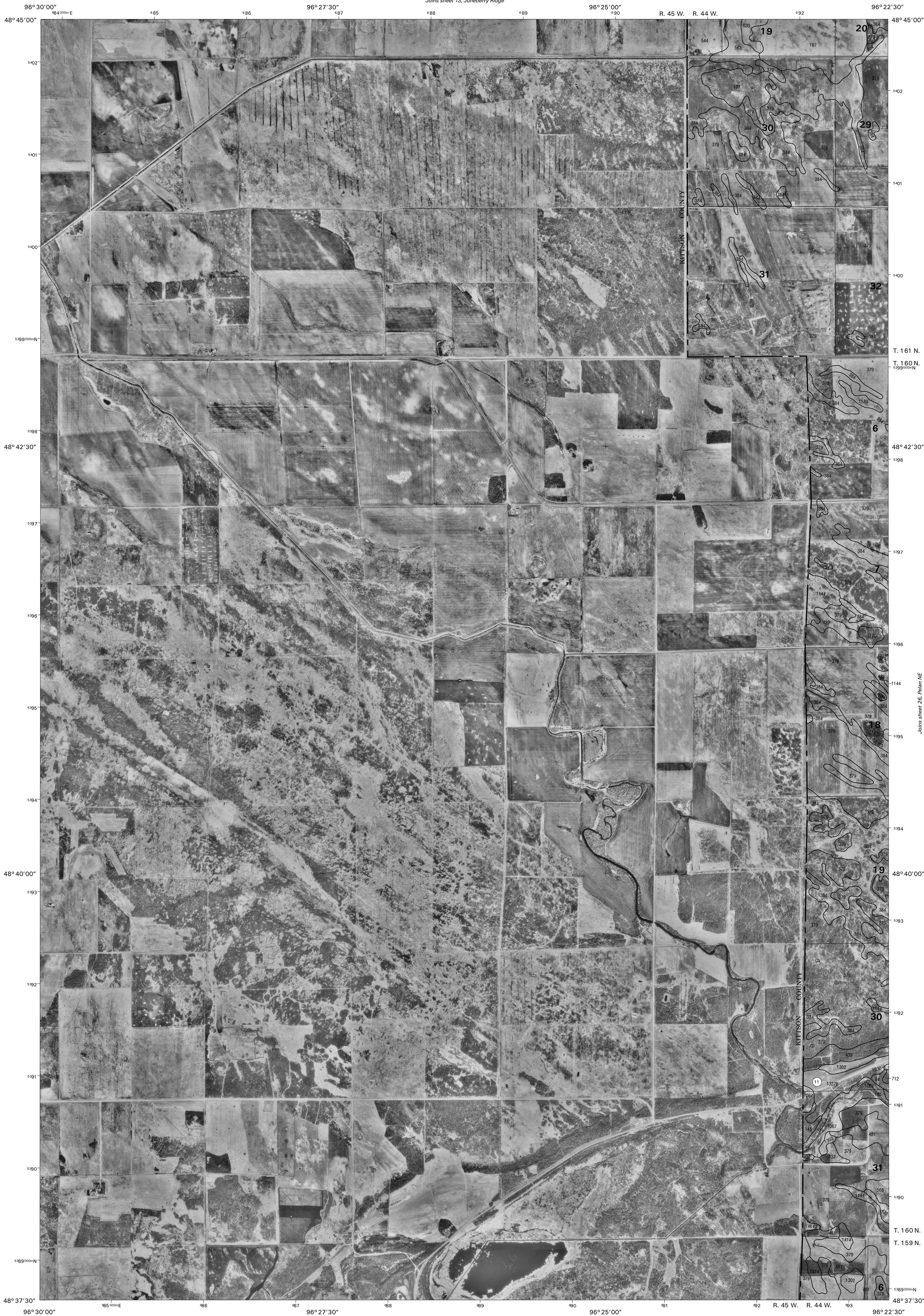
The image shows three horizontal scale bars. The top bar is labeled 'KILOMETERS' and has markings at 0, 1, 2, 3, 4, 5, 6, and 7. The middle bar is labeled 'FEET' and has markings at 0, 1000, 2000, 3000, 4000, 5000, 6000, and 7000. The bottom bar is labeled 'MILES' and has markings at 0, 1, 2, 3, 4, 5, 6, and 7. The scale is 1:24000.



ROOSEVELT, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 24 OF 46

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ROSEAU COUNTY, MINNESOTA
PELAN QUADRANGLE
SHEET NUMBER 25 OF 46

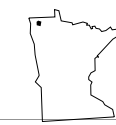
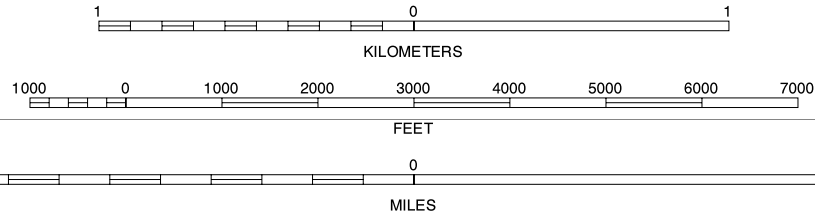


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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 14. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

Joins sheet 37, Twistal Swamp

SCALE 1:24000

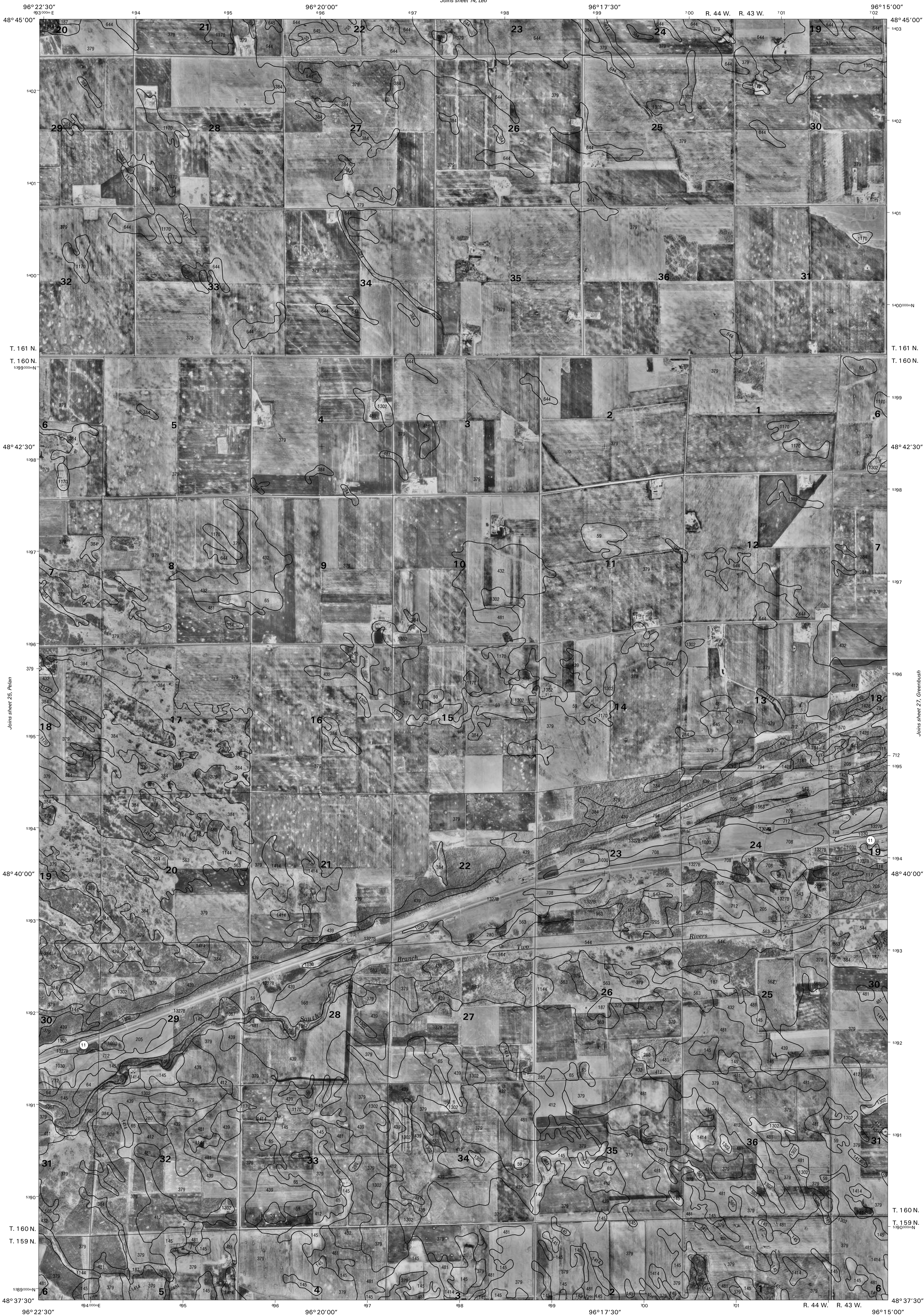


QUADRANGLE LOCATION

PELAN, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 25 OF 46

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ROSEAU COUNTY, MINNESOTA
PELAN NE QUADRANGLE
SHEET NUMBER 26 OF 46

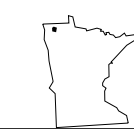
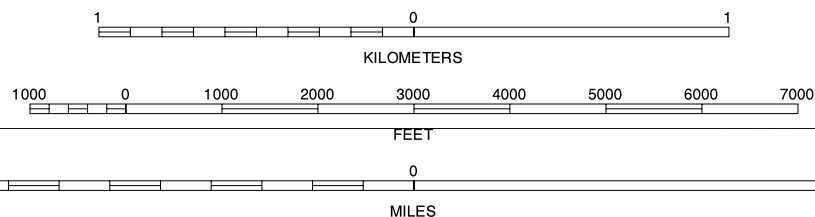


This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey, Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 14. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

Joins sheet 38, Pelan SE

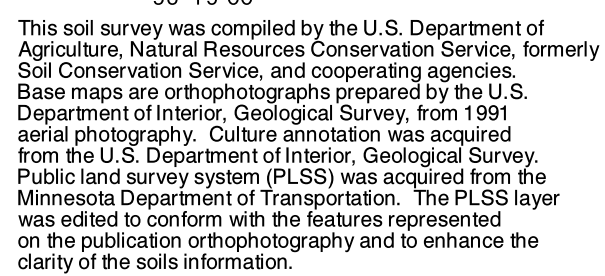
SCALE 1:24000



QUADRANGLE LOCATION

PELAN NE, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 26 OF 46

ROSEAU COUNTY, MINNESOTA
GREENBUSH QUADRANGLE
SHEET NUMBER 27 OF 46



North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 14. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

SCALE 1:24000

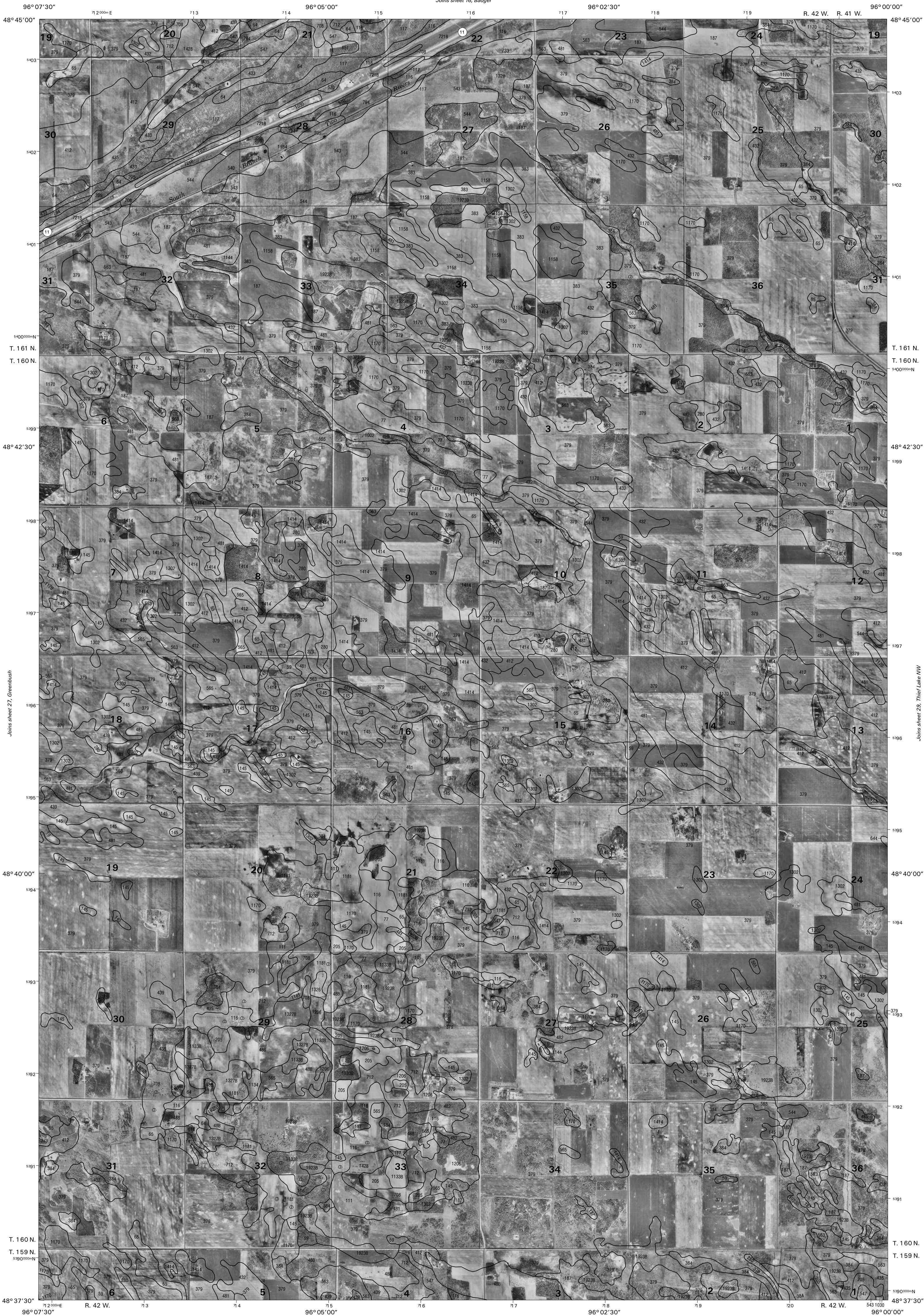
KILOMETERS

FEET

MILES



GREENBUSH, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 27 OF 46

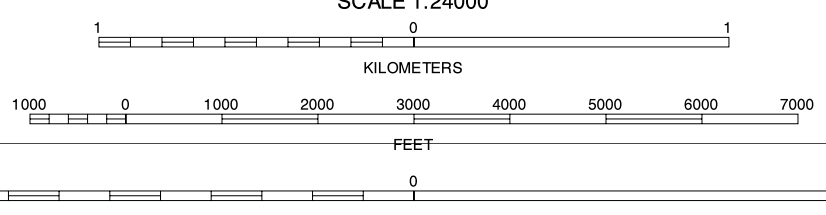


This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey, Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 14.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

Joins sheet 40, Greenbush SE

SCALE 1:24000

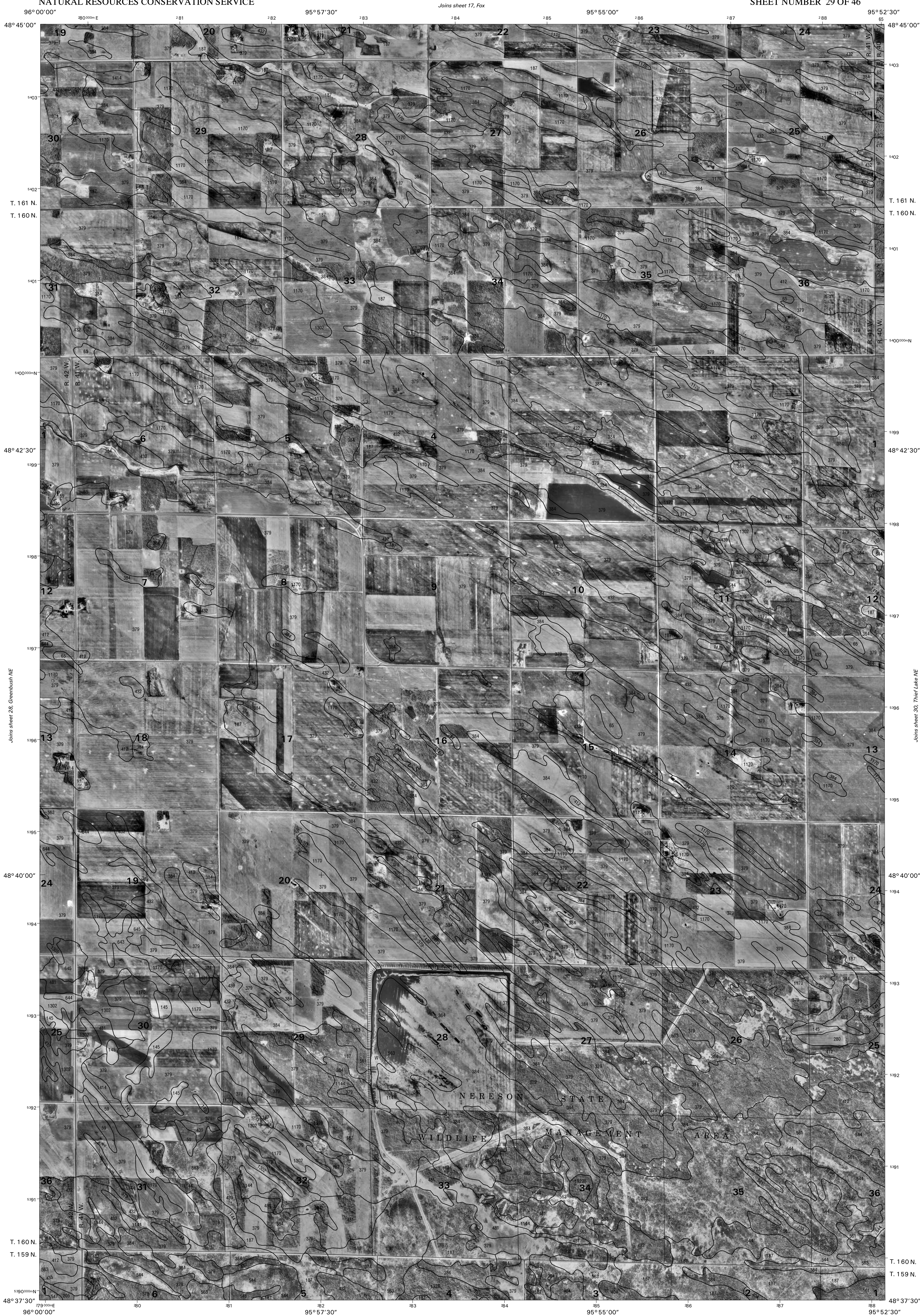


QUADRANGLE LOCATION

GREENBUSH NE, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 28 OF 46

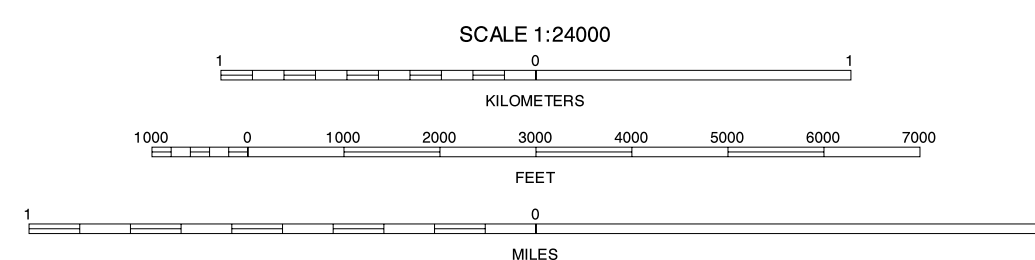
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ROSEAU COUNTY, MINNESOTA
THIEF LAKE NW QUADRANGLE
SHEET NUMBER 29 OF 46



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1:80,000 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey, Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information.

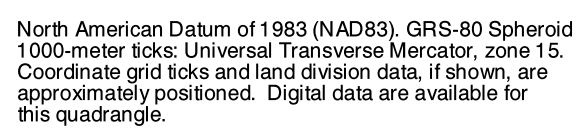
North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

THIEF LAKE NW, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 29 OF 46

ROSEAU COUNTY, MINNESOTA
THIEF LAKE NE QUADRANGLE
SHEET NUMBER 30 OF 46

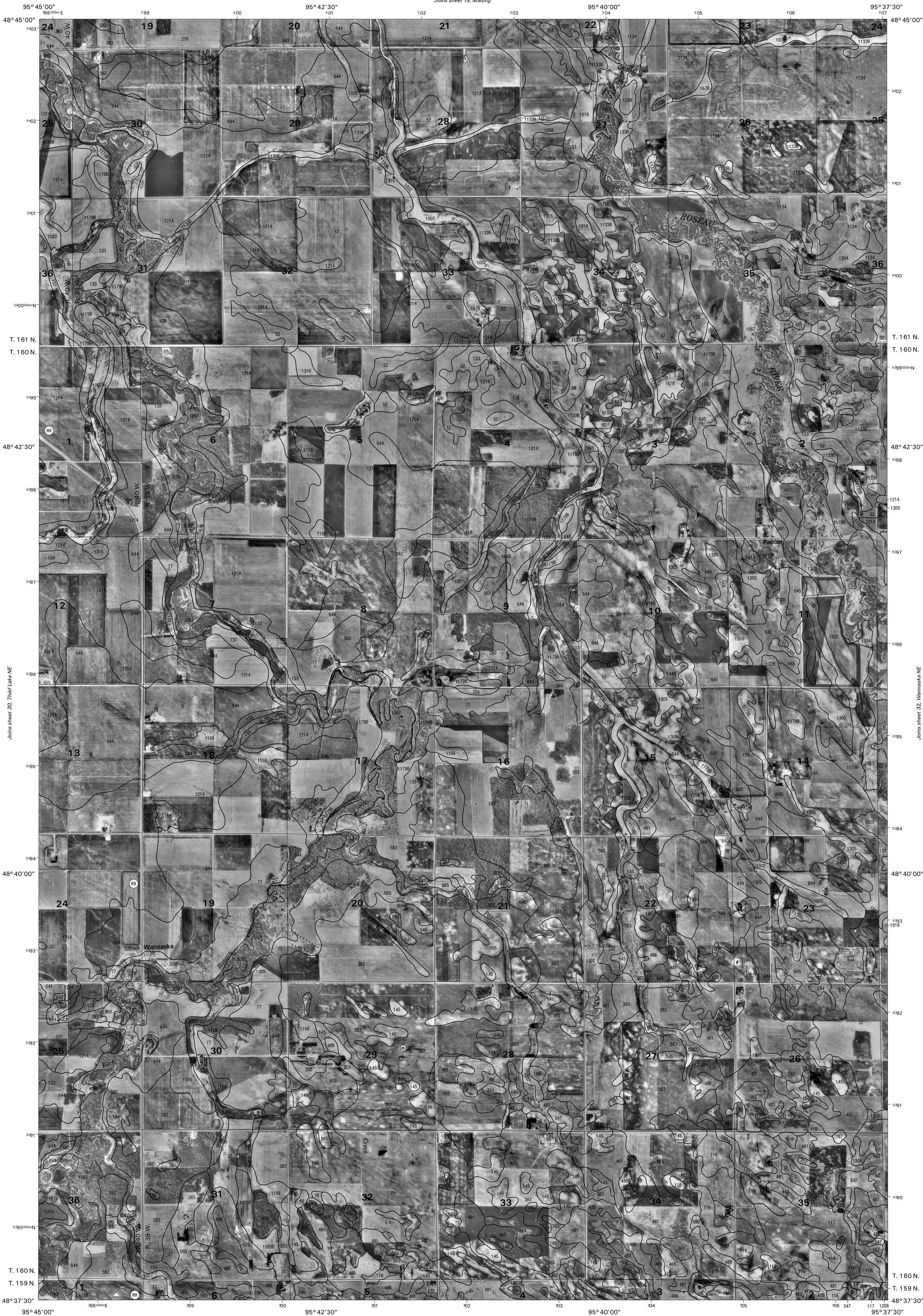


FEET



UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ROSEAU COUNTY, MINNESOTA
WANNASKA QUADRANGLE
SHEET NUMBER 31 OF 46

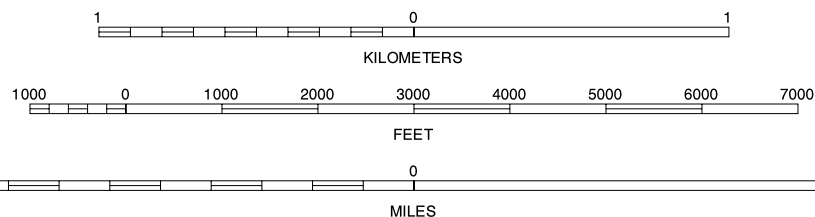


This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey, Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

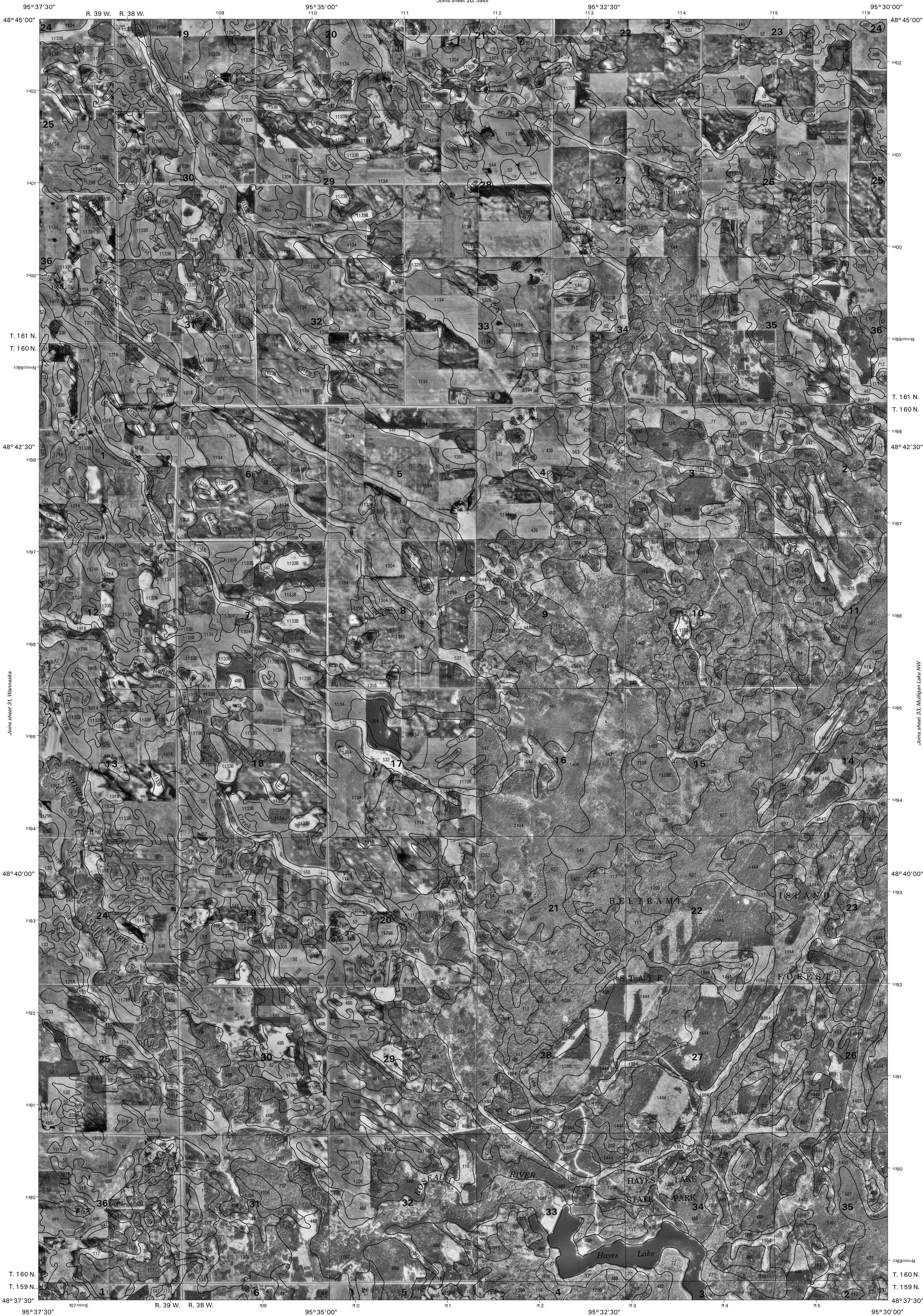
Joins sheet 43, Wannaska SW

SCALE 1:24000



QUADRANGLE LOCATION

WANNASKA, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 31 OF 46



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey, Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information.

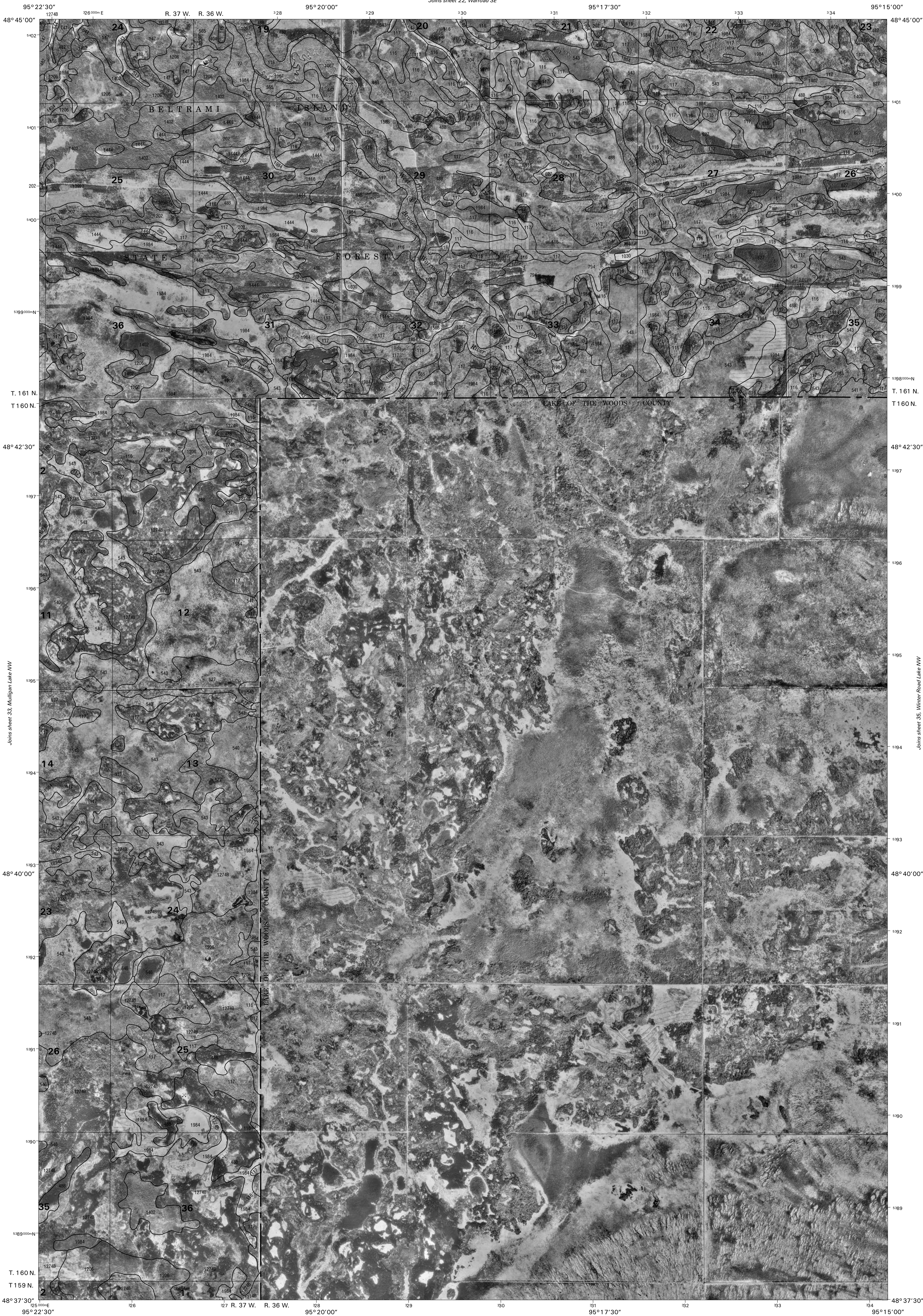
North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

ROSEAU COUNTY, MINNESOTA
MULLIGAN LAKE NW QUADRANGLE
SHEET NUMBER 33 OF 46

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

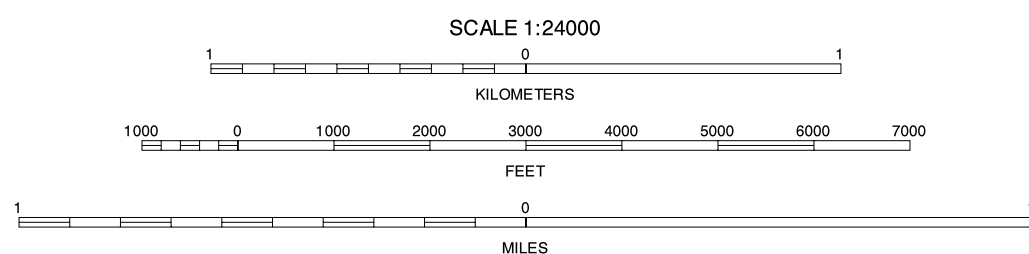
MULLIGAN LAKE NW, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 33 OF 46



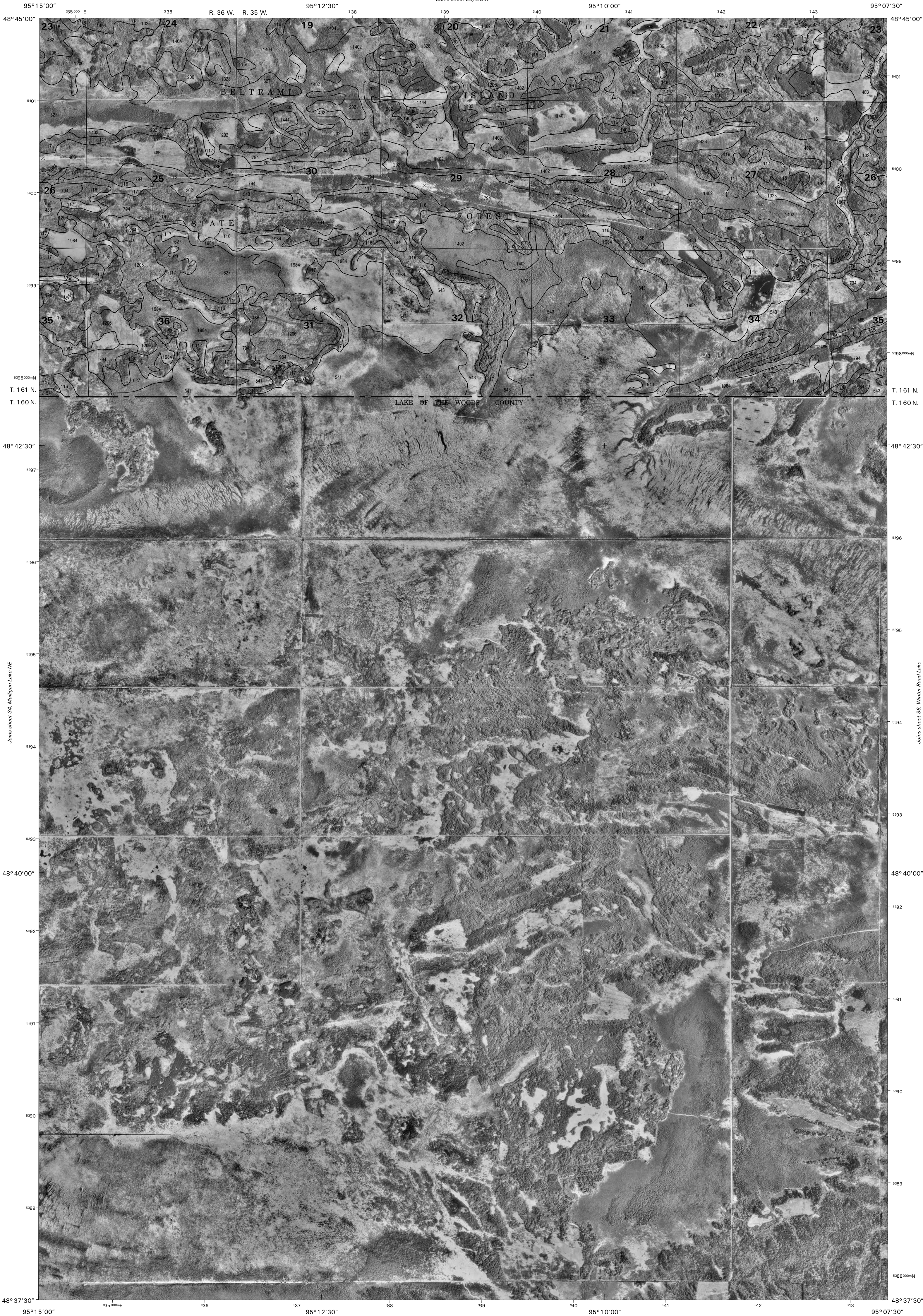


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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

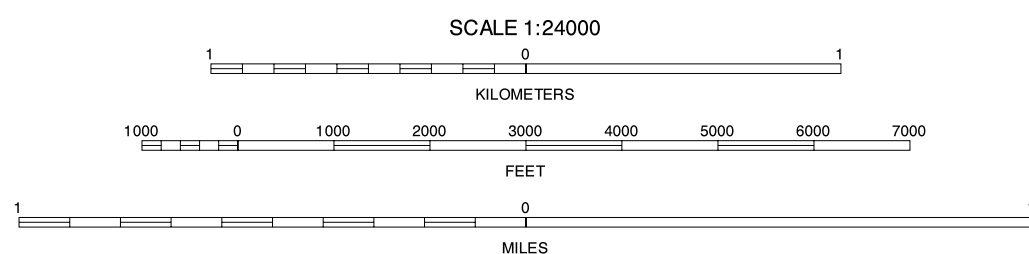
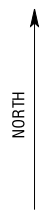


MULLIGAN LAKE NE, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 34 OF 46

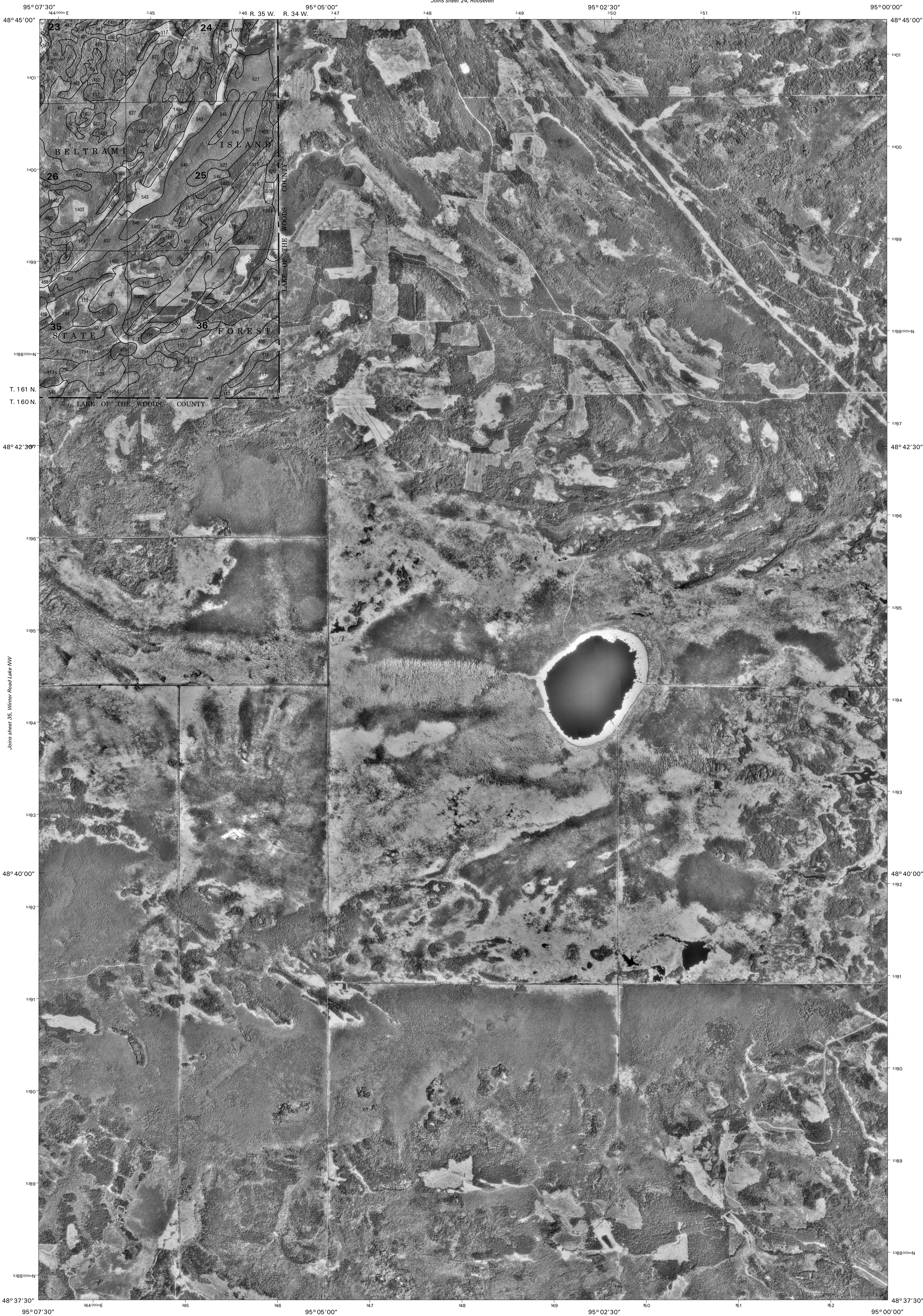


This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1981 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey, Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

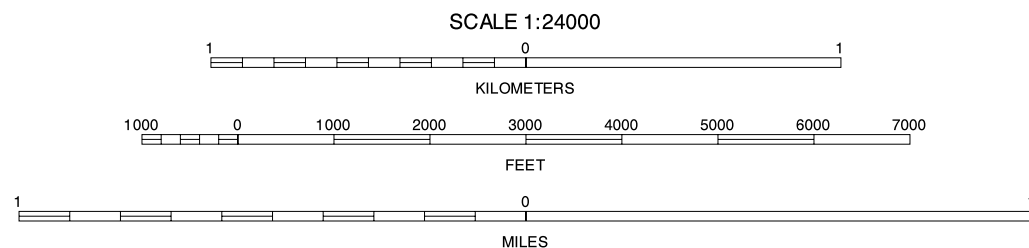


WINTER ROAD LAKE NW, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 35 OF 46



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1951 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey, Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information.

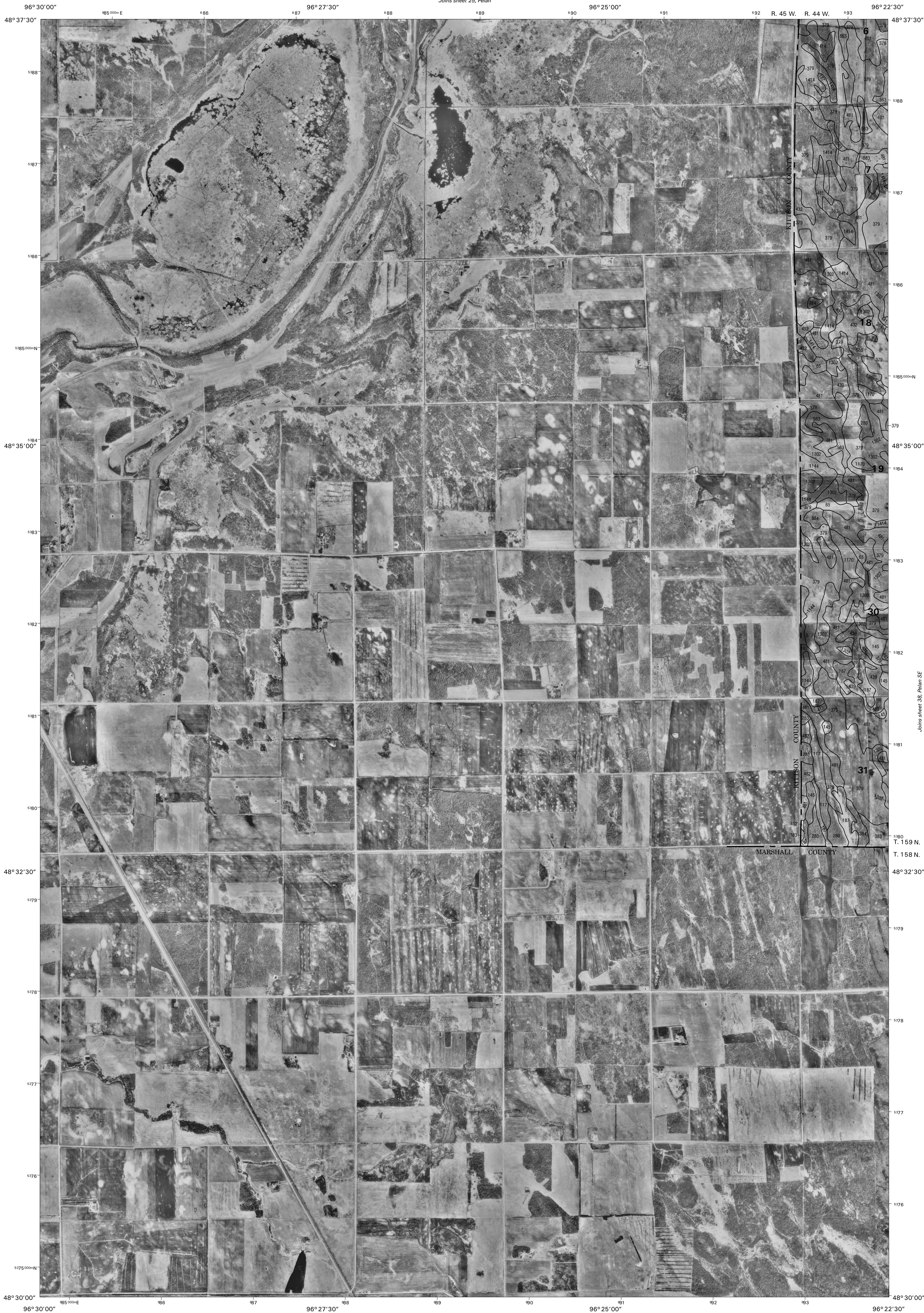
North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 15.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



WINTER ROAD LAKE, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 36 OF 46

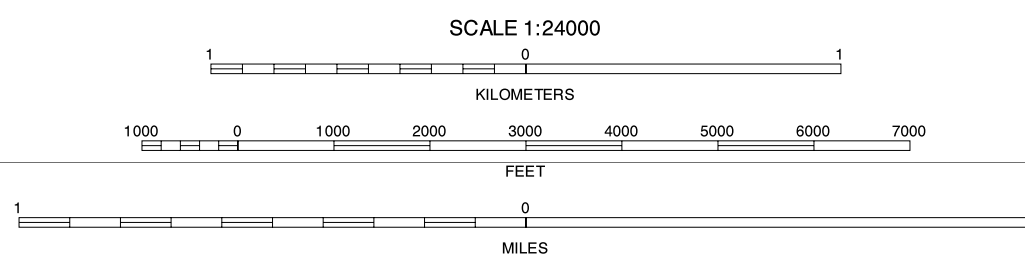
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ROSEAU COUNTY, MINNESOTA
TWISTAL SWAMP QUADRANGLE
SHEET NUMBER 37 OF 46



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey, Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 14. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

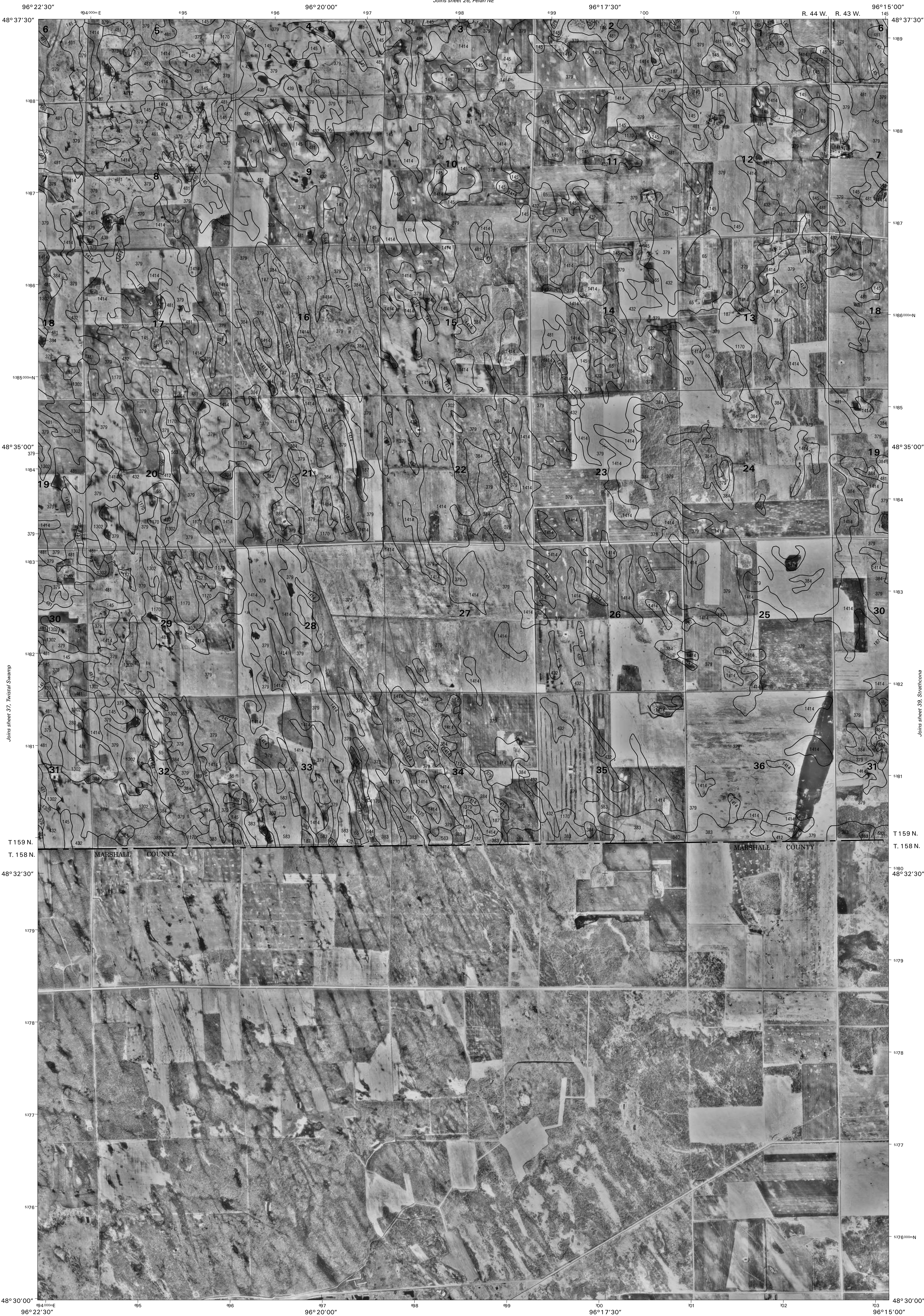


QUADRANGLE LOCATION

TWISTAL SWAMP, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 37 OF 46

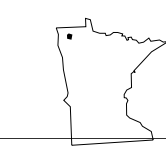
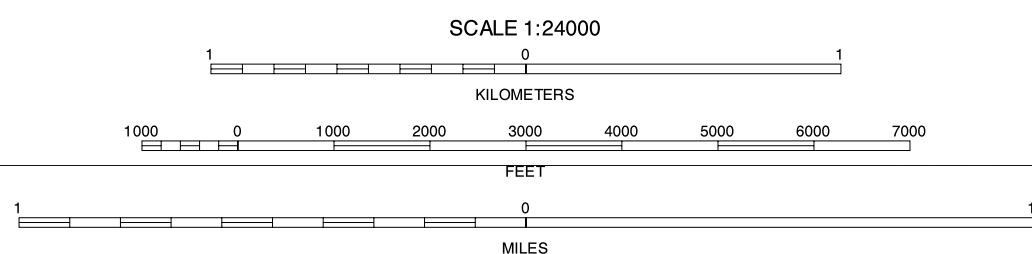
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ROSEAU COUNTY, MINNESOTA
PELAN SE QUADRANGLE
SHEET NUMBER 38 OF 46



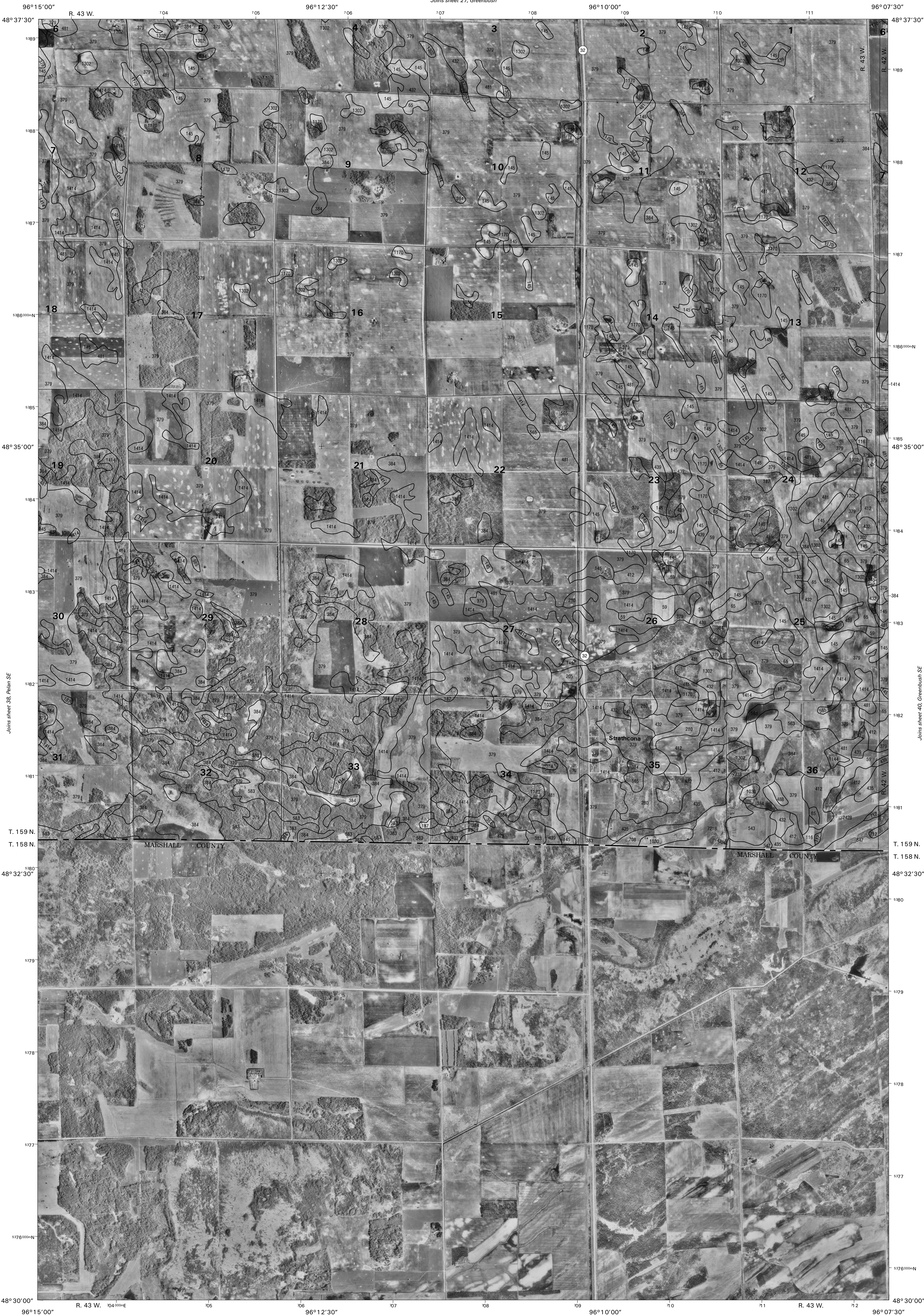
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey, Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 14. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



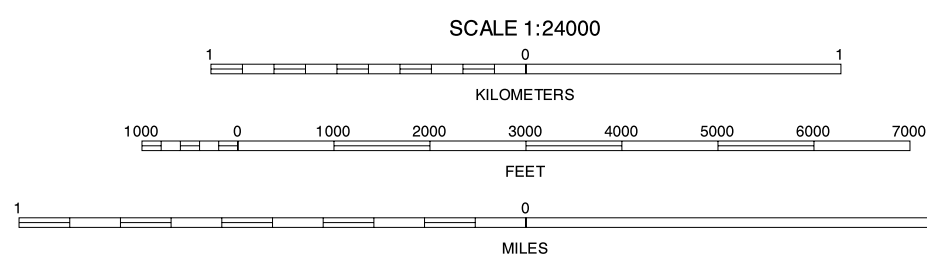
QUADRANGLE LOCATION

PELAN SE, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 38 OF 46



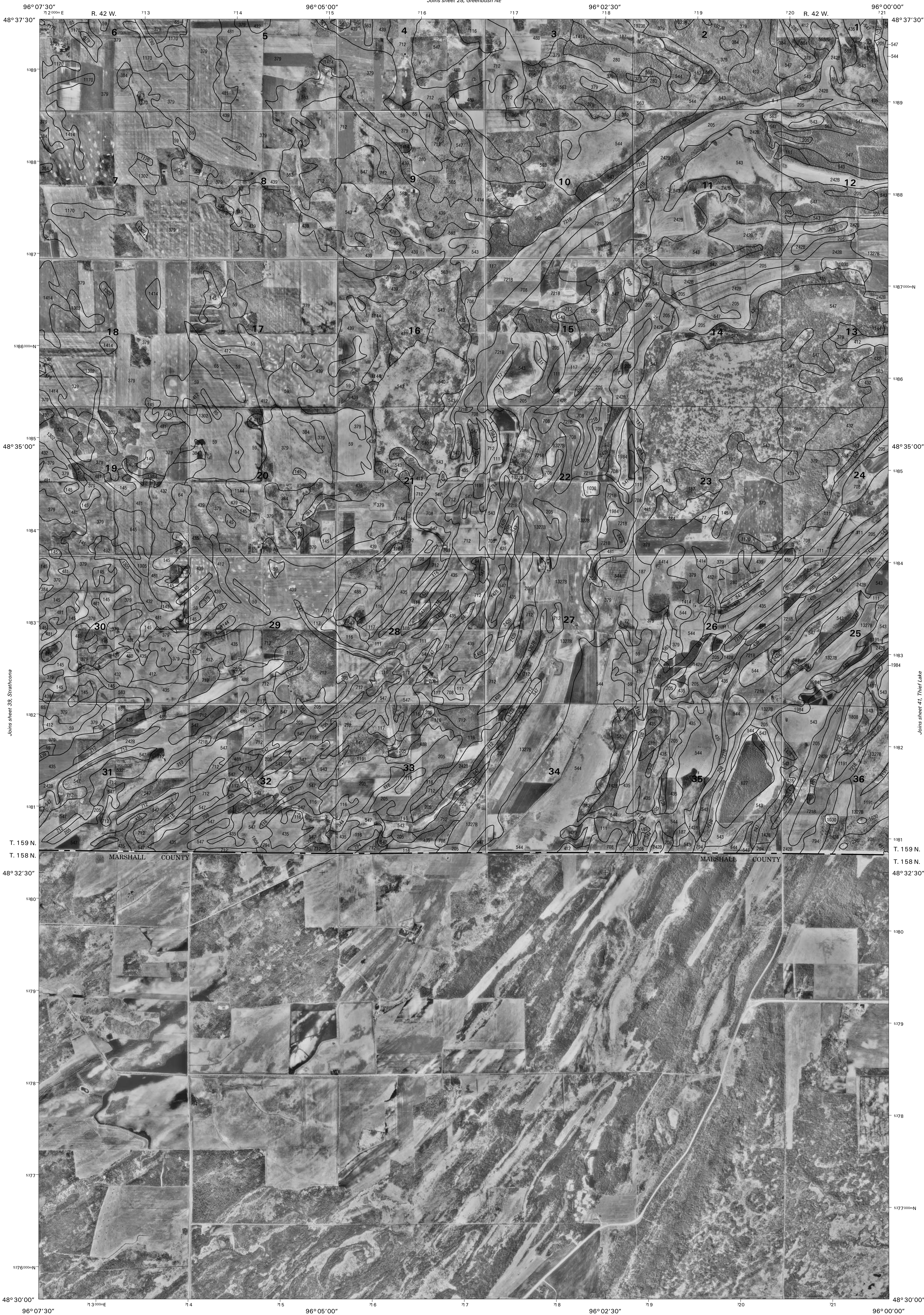
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps or orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1981 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey, Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 14. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



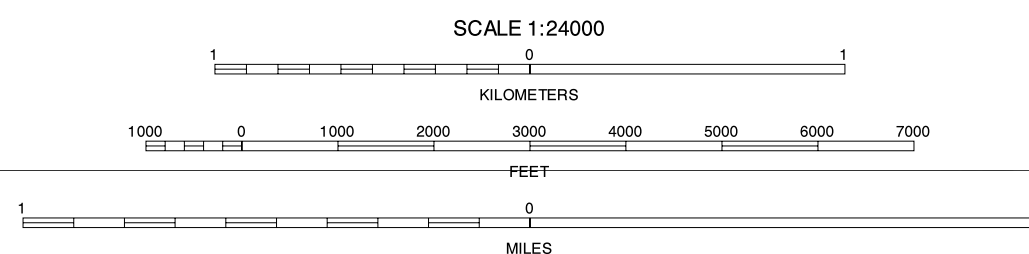
QUADRANGLE LOCATION

STRATHCONA, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 39 OF 46



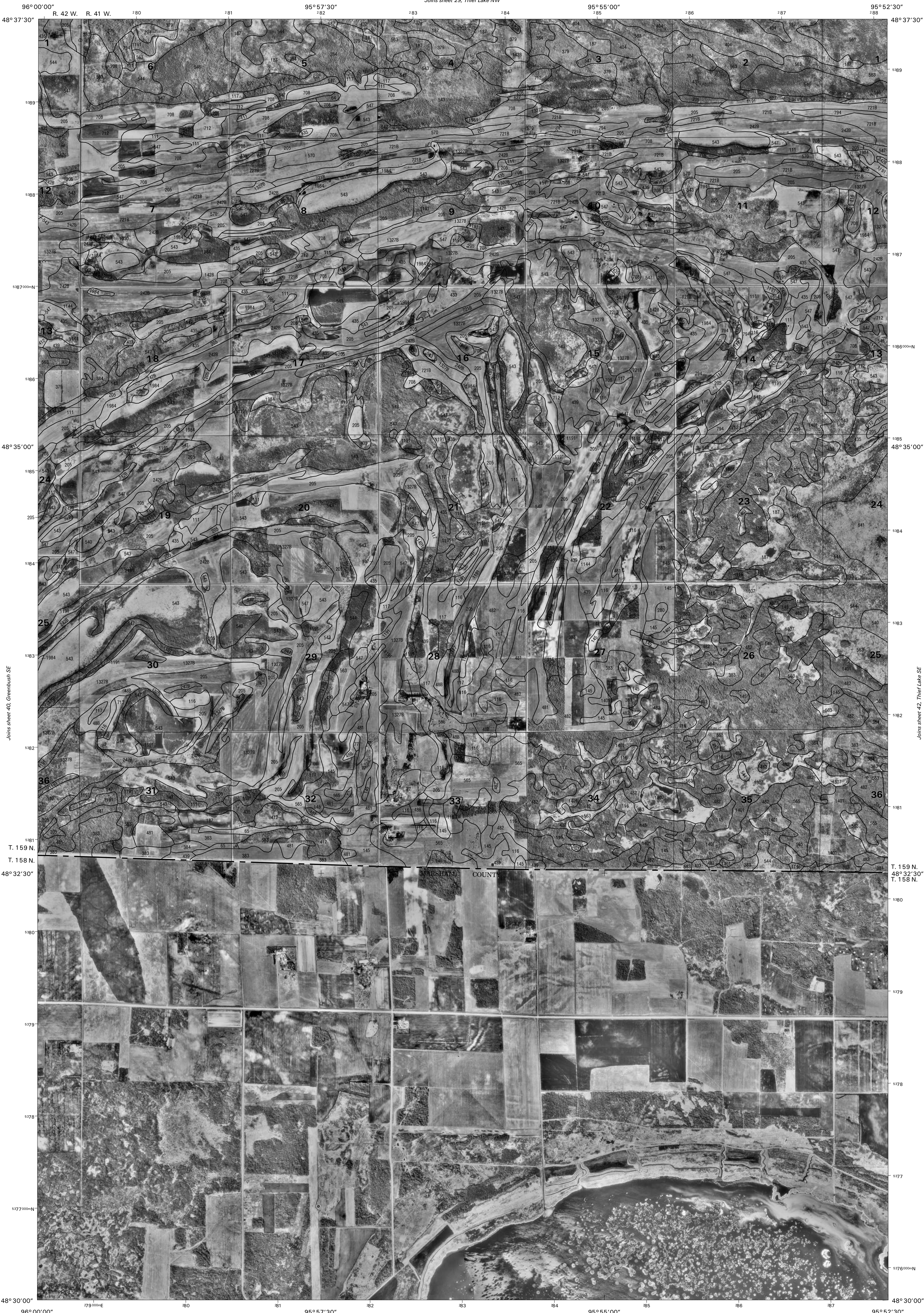
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey, Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 14.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



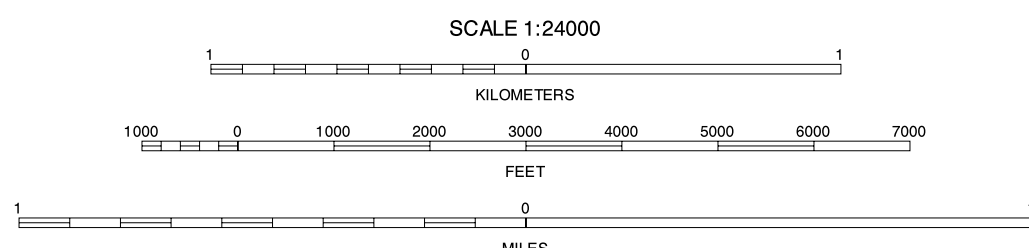
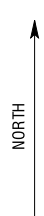
QUADRANGLE LOCATION

GREENBUSH SE, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 40 OF 46



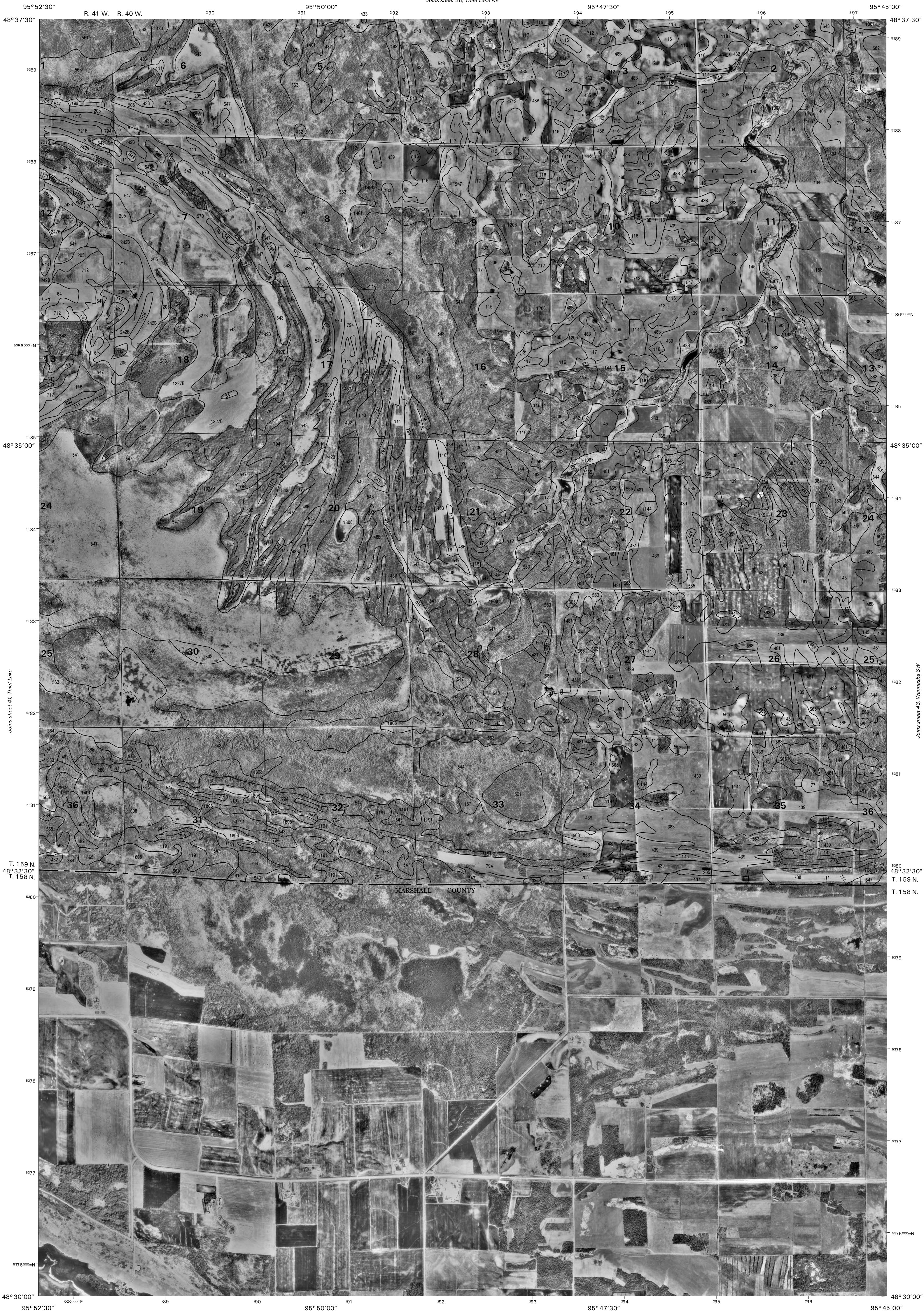
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey, Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 15.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



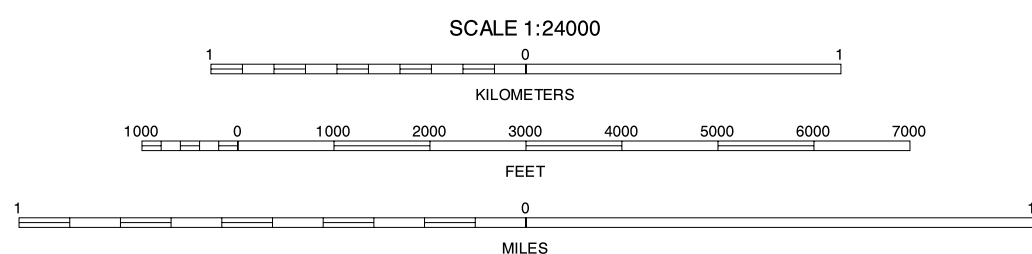
QUADRANGLE LOCATION

THIEF LAKE, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 41 OF 46



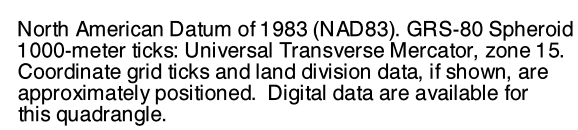
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey, Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 15.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



THIEF LAKE SE, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 42 OF 46

ROSEAU COUNTY, MINNESOTA
WANNASKA SW QUADRANGLE
SHEET NUMBER 43 OF 46



WANNASKA SW, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 43 OF 46

ROSEAU COUNTY, MINNESOTA
SKIME QUADRANGLE
SHEET NUMBER 44 OF 46

North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 15.
Coordinate grid ticks and land division data, if shown, are
approximately positioned. Digital data are available for
this quadrangle.

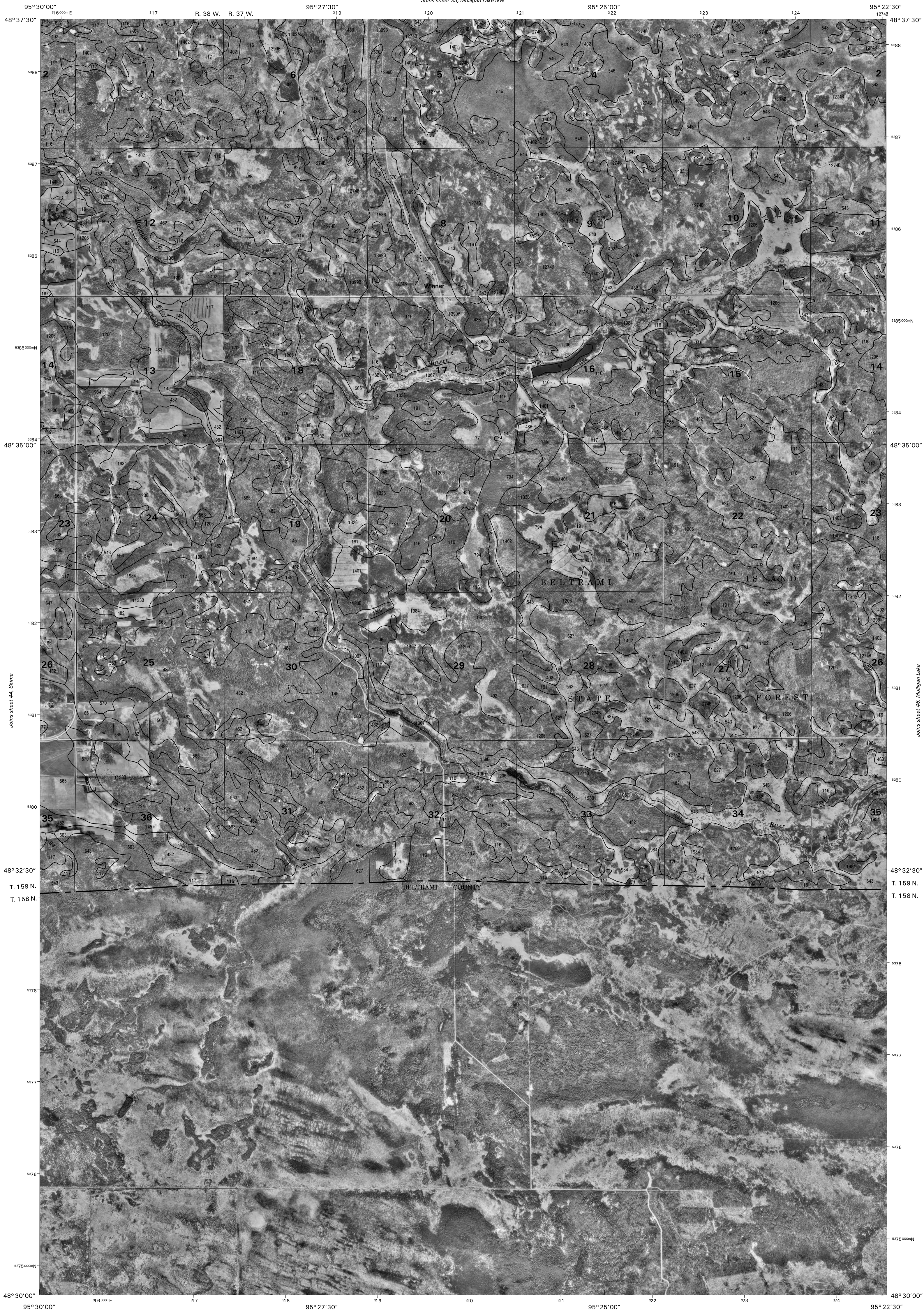
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QUADRANGLE LOCATION

SKIME, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 44 OF 46

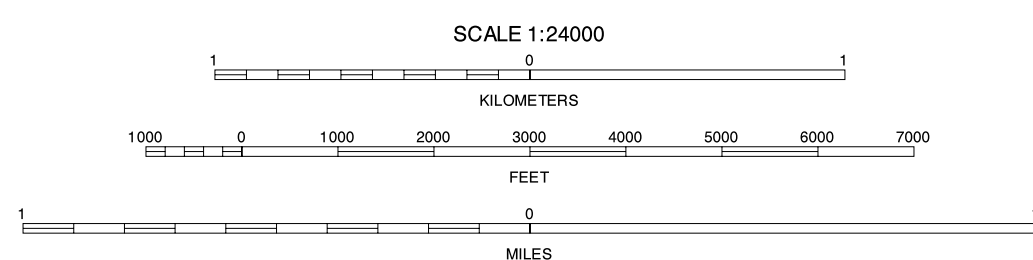
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ROSEAU COUNTY, MINNESOTA
MULLIGAN LAKE SW QUADRANGLE
SHEET NUMBER 45 OF 46



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, formerly Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1991 aerial photography. Culture annotation was acquired from the U.S. Department of Interior, Geological Survey, Public land survey system (PLSS) was acquired from the Minnesota Department of Transportation. The PLSS layer was edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 15.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

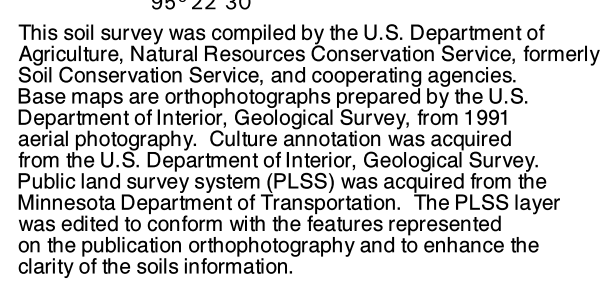


QUADRANGLE LOCATION

MULLIGAN LAKE SW, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 45 OF 46

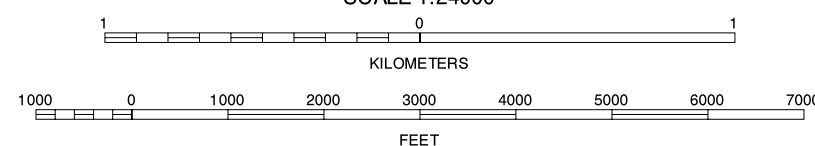
ROSEAU COUNTY, MINNESOTA
MULLIGAN LAKE QUADRANGLE
SHEET NUMBER 46 OF 46

Joins sheet 34, Mulligan Lake NE

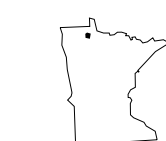


North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 15.
Coordinate grid ticks and land division data, if shown, are
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this quadrangle.

SCALE 1:24000



MILES



QUADRANGLE LOCATION

MULLIGAN LAKE, MINNESOTA
7.5 MINUTE SERIES
SHEET NUMBER 46 OF 46